

# MIP-921<sup>s</sup>

## Version 1

**2002-10-06**



SAFETY ALERT MONITOR

## Addendum to Page 15 of the MIP-921<sup>s</sup> Manual

**Downloading Stored Messages....**Stored messages can be downloaded using either a computer or serial printer connected to the "Host In/Out".

**Computer...**Stored messages can be downloaded using a computer connected to the "Host In/Out". To download to the computer, a terminal program such as Hyperterminal is used. You must select the COMM port on your computer and initialize it as described on Page 15 under "Communications Port Initialization". **NOTE: The baud rate for the Hyperterminal needs to be 1200 baud.** Once the COMM port is initialized, use the straight thru programming cable that was sent with the MIP to connect the "Host In/Out" port to the COMM port on your computer. Next, use the front panel programming to get to level 2, "Print Stored Message". Press the "Yes" key. The LCD will display "Use Host Port?" Press the "Yes" key and it should download the messages to the computer. Once the messages are downloaded, a text program can be used to format the data. The "Clear MSG Memory" function will clear all stored messages.

**Serial Printer...**If a serial printer is connected to the "Host In/Out" port, see the explanation in the Unit Operation section on pages 22 and 23. . Next, use the front panel programming to get to level 2, "Print Stored Message". Press the "Yes" key. The LCD will display "Use Host Port?" Press the "Yes" key and it should download the messages to the serial printer. Once the messages are downloaded a text program can be used to format the data. The "Clear MSG Memory" function will clear all stored messages.

If you have any questions, please contact customer service at (308) 428-4705.



S A F E T Y   A L E R T   M O N I T O R

**TECHNICAL BULLETIN 2002-1**  
**On Board MIP-921e or s AM Radio Adjustment**

**Problem:** MIP-921e or s AM radio will not tune to a frequency above 1000 KHz.

**Fix:** 1. Remove the top lid of the MIP. Apply power to the unit.

2. Configure the radio slot to AM.

3. Tune the radio slot to 880 KHz.

4. Use a DC voltmeter and monitor the voltage at test point "Tune Test" on the radio being tuned. The "Tune Test" point is on the left-side of the radio board near L8 when looking at the front of the MIP.

5. With a small blade screwdriver, adjust variable cap (C23) to minimize the voltage at the test point. Set the voltage to the lowest possible setting.

6. With a screwdriver, adjust variable inductor (L2) to further reduce the voltage until it reaches 4.0 volts. The "tuning" slug should be adjusted out or up from the metal case to get the desired results...i.e...counterclockwise.

If you have any questions, please call customer service at (308) 428-4705.

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## **EXPLANATION OF THE MANUAL**

### **How to use this Manual....**

This manual can be used for both the MIP-921<sup>s</sup> and the MIP-921<sup>s</sup> with options. The MIP-921<sup>s</sup> is a standard unit and is a Version 1.

The Version of the MIP-921<sup>s</sup> that you have is determined by the control E-prom installed from the factory. To determine the version of the MIP-921<sup>s</sup> firmware that you have, note the LCD display upon initial power start up. You may also use the "Display Version" command in Level 1 as described on page 23 of this manual. Your version number will display in a "X.X" format. Example "7.1" This denotes Version 7, Batch 1.

## INTRODUCTION

**Product Overview....** This Operator's Manual provides installation and operation information on the MIP-921<sup>s</sup> Emergency Alert System (EAS) message encoder/decoder. The MIP-921<sup>s</sup> design meets, or exceeds, the requirements detailed in Part 11 of FCC rules for the National EAS. The decoder portion of the MIP-921<sup>s</sup> accepts four EAS message sources and provides visual and audible indication to the user. The encoder section of the MIP-921<sup>s</sup> enables the re-transmission, or generation, of EAS messages.

**Manual Overview....** This Operator's Manual is divided into four major sections: Product Description, Unit Setup, Unit Operation, and Diagnostics. Product Description provides a system overview and physical description of the MIP-921<sup>s</sup>. Unit Setup describes the steps necessary in preparing the MIP-921<sup>s</sup> for its primary function of monitoring EAS messages. The Unit Operation section explains the normal MIP-921<sup>s</sup> front panel and the host computer operating procedures. The Diagnostic section gives instructions on what to do if things do not appear normal. Appendices provide additional information that may be valuable in the integration of the MIP-921<sup>s</sup> into the cable site.

## WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. re-orient the receiving antenna
2. relocate the MIP-921<sup>s</sup> with respect to the receiver
3. move the MIP-921<sup>s</sup> away from the receiver
4. plug the MIP-921<sup>s</sup> into a different outlet so that the MIP-921<sup>s</sup> and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C.20401, Stock No. 004-000-00345-4.

## **PRODUCT DESCRIPTION**

**System Overview....**The MIP-921<sup>s</sup> is your cable system's link into the Emergency Alert System. The unit contains a decoder section that receives EAS messages from up to four sources and interprets them for aural and visual display. The other major part of the MIP-921<sup>s</sup> is the encoder section that generates and transmits EAS messages for your site.

**What is an EAS message?....**An EAS message is emergency information generated by a Federal, State, or Local Government Agency that is pertinent to the public. They include messages such as Severe Thunderstorm Warnings, Tornado Watches, Hazardous Materials Accident, etc. It consists of four parts, transmitted in the following order: the Header, the TwoTone Attention Signal, the Voice Text, and the End of Message (EOM). The Header and the EOM are digitally encoded signals that allow encoders to communicate with the decoders. The attention signal and voice text signal inform the public of the emergency.

Messages are received from a minimum of two sources, often broadcast stations. External radio receiver audio outputs are connected to the back of the MIP-921<sup>s</sup>, as discussed in the Unit Setup section. Figure 1 provides a system diagram showing the MIP-921<sup>s</sup> integrated into the cable system. The Header part of the EAS message received by the MIP-921<sup>s</sup> contains detailed information concerning an event that may be occurring (i.e. Tornado Watch, Flash Flood, Hurricane Warning, etc.) and the county, or counties, that may be affected. The event portion is a three digit PIL Code. For example, FLW is the PIL code for a Flood Warning. Appendix A provides a complete list of PIL codes used by the originating agencies. The affected county is designated by a six-digit code. For example, the six-digit code for Blount County in Tennessee is 047009 (A complete list of all county codes are in the back of this manual). With this information, the MIP-921<sup>s</sup> and other decoders "know", prior to the transmission of the voice text, what the voice text message contains. In addition, the MIP-921<sup>s</sup> can be programmed by its user to perform tasks based entirely on the unique contents of each EAS message. Some of these tasks are: ignore the message, signal that the message is important, direct the voice text to the cable system and re-transmit the message with audio/data.

Each EAS message that is received has an effective time. The effective time is the duration that the event (Tornado Watch) is active. The MIP-921<sup>s</sup> recognizes this effective time and maintains the message information in an active file for the duration of the message.

**How is the MIP-921<sup>s</sup> programmed to respond to EAS messages?....**An EAS message consists of an event code coupled with one or more county codes. The user can create and store in the MIP-921<sup>s</sup> a "TERM" which consists of a single event and a single county. A maximum of 124 TERMS can be stored in the MIP-921<sup>s</sup>. When an EAS message is received, the MIP-921<sup>s</sup> compares the message with the stored TERMS and attempts to find a match. In other words, the MIP-921<sup>s</sup> looks for a specific TERM match for both the event and county in the message. If there is a match, the EAS message becomes a HOT MESSAGE. Along with each TERM, the user is given the opportunity to program several action items (stated above) when the MIP-921<sup>s</sup> decodes a HOT MESSAGE.

Re-transmission of selected EAS messages (HOT MESSAGE) is also a function of the MIP-921<sup>s</sup>. All active EAS messages received by the MIP-921<sup>s</sup> are recorded and stored in the active file. For re-transmission of the message, the MIP-921<sup>s</sup> encodes the message and sends it out with an ID code at the end. In addition, the MIP-921<sup>s</sup> enables the user to generate their own EAS message. Generation of EAS messages is protected by password. This prohibits unauthorized generation of messages.

**Physical Description....**The MIP-921<sup>s</sup> is a 19-inch rack mountable unit that provides the user visual and audible access to EAS messages via front panel controls. External interfaces are provided through connectors located on the front and rear panel of the MIP-921<sup>s</sup>.

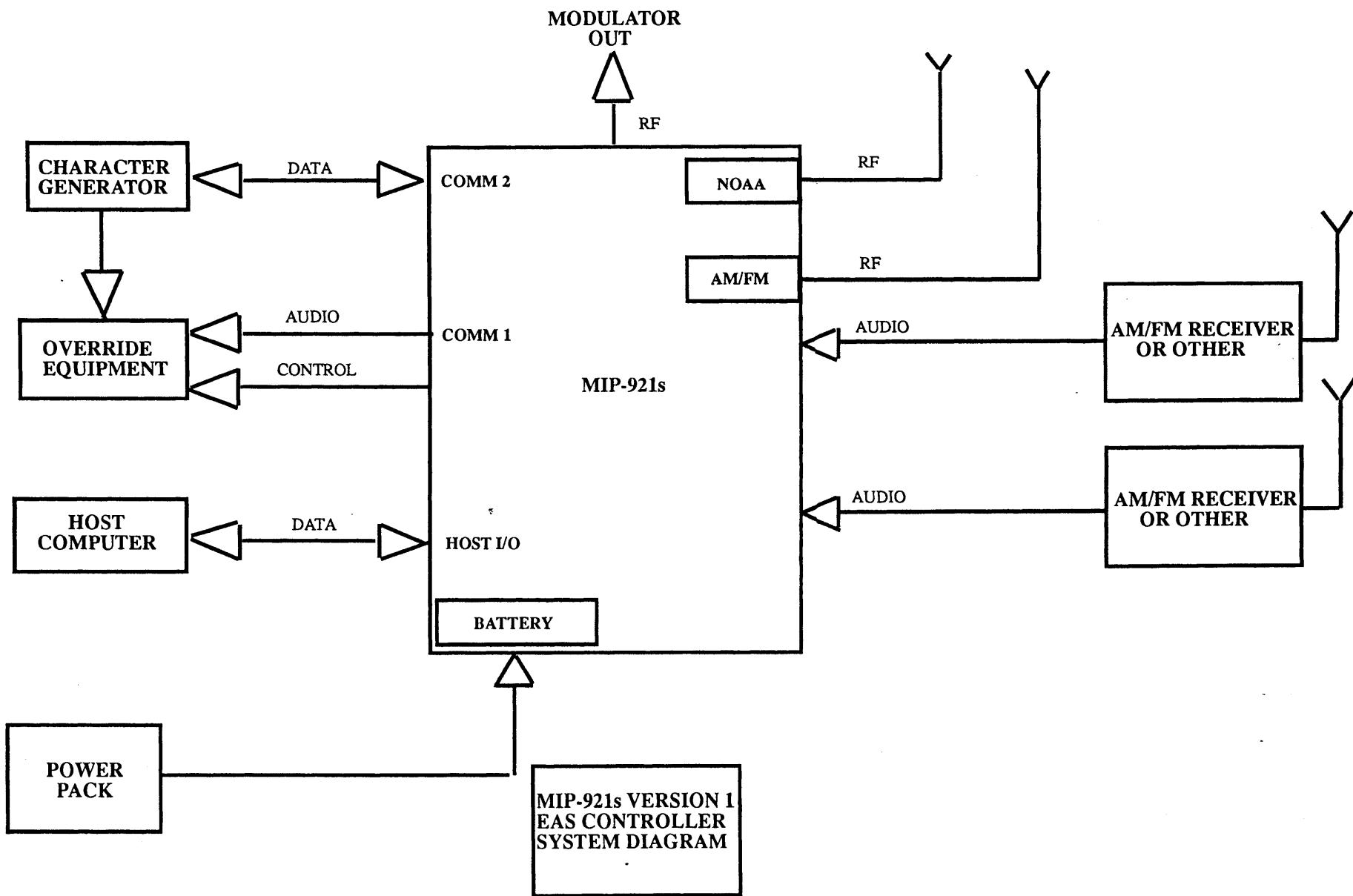


FIGURE 1

Figure 2 is an illustration of the front panel of the MIP-921<sup>s</sup>. The front panel contains a speaker, four push button control keys, 1 green Light Emitting Diode (LED) lamp, 3 red LED lamps, and a backlit (LCD) viewing screen. This panel allows front panel control of the MIP-921<sup>s</sup>. Also located on the front panel is a 9 pin D-Type connector, used to interface to a Host computer to provide remote control of the MIP-921<sup>s</sup> and to input audio via a microphone interface.

**Message Display**....The viewing screen on the front panel is a backlit 16 character liquid crystal display (LCD) that displays messages to the user. It conveys the following information:

1. In the idle, or monitoring mode, the display shows "MIP-921 Ready"
2. When receiving an EAS message, the message is scrolled across the display
3. Scrolling of the last active message when commanded
4. Command messages for menu driven control of the MIP-921<sup>s</sup>
5. System status messages

**IMPORTANT NOTE:** The viewing screen is only backlit when needed for message display.

**LED Indicators**....The green LED (labeled as Ready) indicates the monitor mode of the MIP-921<sup>s</sup>. The LED can have the following states:

1. On – Indicates the MIP-921<sup>s</sup> is in the Automatic Mode and will automatically process EAS messages that have been selected in programming.
2. Blinking – Indicates the MIP-921<sup>s</sup> is in the Manual Mode and EAS messages can be processed.
3. Off – Indicates the MIP-921<sup>s</sup> is off-line in the setup/configuration mode.

The three red LED lamps are designated as ALERT, TX, and ACTIVE, respectively. These three LED lamps turn on in a ripple sequence when the MIP-921<sup>s</sup> is receiving a valid EAS message. Each LED lamp provides MIP-921<sup>s</sup> status:

**ALERT LED**      On Solid – Indicates the MIP-921<sup>s</sup> is processing an EAS message.  
                        Blinking – Indicates the MIP-921<sup>s</sup> has diagnosed an audio input that is too low.

**TX LED**            On Solid – Indicates the MIP-921<sup>s</sup> is transmitting or receiving an EAS message.

**ACTIVE LED**       On Solid – Indicates the MIP-921<sup>s</sup> has unexpired EAS messages in memory. An unexpired message is an EAS event that is still active.

The four push button control keys are identified as YES, NO, MODE, and ENTER, respectively. Each key provides a specific function in the command of the MIP-921<sup>s</sup>.

**YES (Red Key)**     Used to provide a positive response to a Command Request

**NO (Blue Key)**      Used to provide a negative response to a Command Request

**MODE (Gray Key)**    Commands the MIP-921<sup>s</sup> to select the next Command Request Level

**ENTER (Black Key)**   Commands the MIP-921<sup>s</sup> to enter a specific date sequence

There are two dual key operations available with these push buttons. A dual key operation is defined as when two keys are pushed and released at the same time. The following operations are available:

**NO and ENTER**        Commands the MIP-921<sup>s</sup> to terminate a command or exit to a lower Command Request Level

**YES and ENTER**

Commands the MIP-921<sup>s</sup> to execute a Weekly Test

**Speaker....**The speaker allows the user to hear stored EAS messages or monitor live audio. There is a rear panel speaker volume adjustment control marked "Speaker Level", accessible to the user. This level control operates in a counter clockwise direction. (i.e. Maximum level is reached at fully counter clockwise.)

Figure 3 illustrates the rear panel of the MIP-921<sup>s</sup>. There are seven connectors and two signal adjustment potentiometers on a standard MIP-921<sup>s</sup>. There are several optional connectors that can be installed on the MIP-921<sup>s</sup>. The connectors are used to interface the MIP-921<sup>s</sup> to an external character generator, audio/video override equipment, electrical power, and analog and digital signals.

The signal adjustment pots are for the speaker volume and the audio output level.

**Power....**This connector receives the power plug attached via a six foot cord to the MIP-921<sup>s</sup>'s Power Pack. The MIP-921<sup>s</sup> operates on DC voltage in a range from 9 to 14 volts DC. The DC current load is approximately 200 millamps. **IMPORTANT NOTE:** Whenever you are disconnecting the power from the MIP-921<sup>s</sup>, make sure that you unplug the power cube from the outlet and then remove the 1/8" power plug from the back of the unit. Additionally, when you reconnect the power to the MIP-921<sup>s</sup>, reconnect the 1/8" power plug into the back of the unit and then plug the power cube into the outlet. **NOTE:** The LCD will say "MIP-921 Ready".

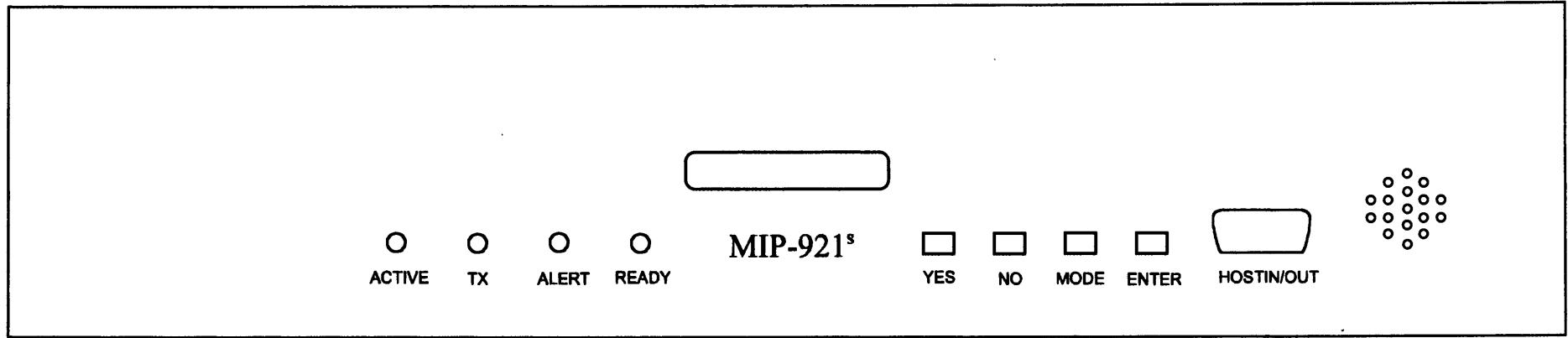
**COMM1 and COMM2....**RS 232 communication ports for data transfers to and from the MIP-921<sup>s</sup>. The port labeled COMM1 is configured to interface with either an external printer or audio/video override equipment. COMM2 is configured to interface with a character generator. Both ports have communication protocols that meet these requirements. See Figure 3 for COMM1 and COMM2 specifications.

**I/O Connector....**Twelve position main signal connector providing system ground, Commercial Hold, 2 sets of relay contacts, and analog input and output signals. The relays (2 each) are single pole normally open types that close when activated for a HOT MESSAGE protocol. (See Product Description for definition of HOT MESSAGE.) The audio inputs can be used for connecting the MIP-921<sup>s</sup> to external EAS message source, the audio output can be used for transmitting EAS messages (Headers, Attention Tones, EOM, and Voice). Some of the I/O connector terminals are duplicated in COMM port 1. Access to Relay 1 or Audio Output can be made at either the I/O connector or COMM port 1. (See Figure 3 for a description of connectors.)

**Audio Output Level Control....**Adjustment of the audio output from the I/O connector is made via the Audio Output Level control. This adjustment has no impact on the Audio Output available on the COMM1 connector. The adjustment range is -40 dBm to +8 dBm. This level control operates in a counter clockwise direction. (i.e. - Maximum level is reached at fully counter clockwise.)

**Speaker Level Control....**The Speaker Level adjustment controls the volume of the speaker. The operation of this control is also counter clockwise.

**Mod. Out....**This optional connector is the output of the on-board 52.00 MHz modulator.



### INDICATOR DEFINITIONS

READY LED	ON SOLID...Indicates the MIP-921 <sup>s</sup> is in the Automatic Monitor Mode. BLINKING...Indicates the MIP-921 <sup>s</sup> is in the Override Monitor Mode. SOLID...Indicates the MIP-921 <sup>s</sup> is in the Off-line Mode.
ALERT LED	ON SOLID...Indicates the MIP-921 <sup>s</sup> has received a VALID message and is processing it. BLINKING...Indicates the MIP-921 <sup>s</sup> has diagnosed a System Fault.
TX LED	ON SOLID... Indicates the MIP-921 <sup>s</sup> is transmitting or receiving an EAS Message.
ACTIVE LED	ON SOLID...Indicates the MIP-921 <sup>s</sup> has unexpired received EAS messages in Memory.
ALL RED LEDs	RIPPLE...Indicates the MIP-921 <sup>s</sup> is receiving a VALID message.

### SWITCH BUTTON DEFINITIONS

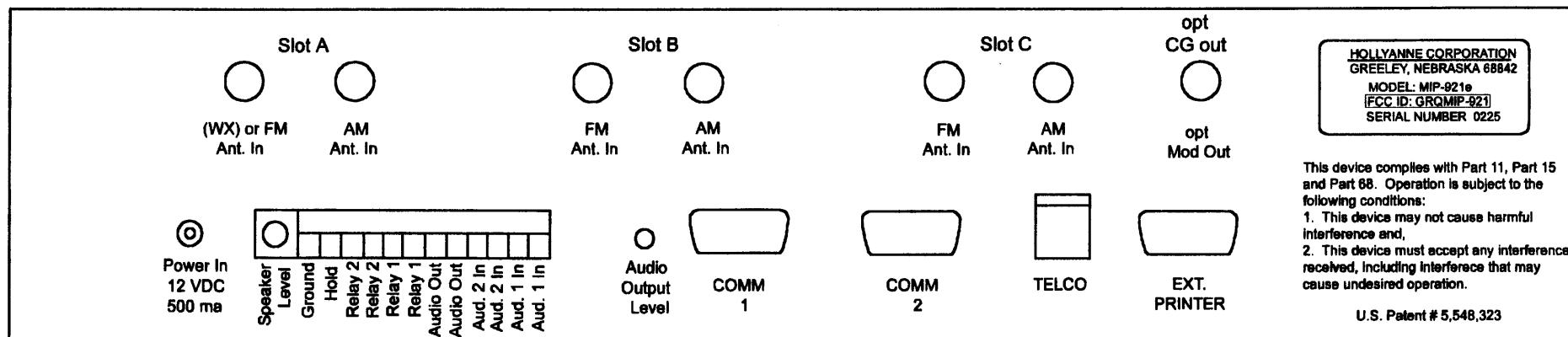
YES	Allows the user to provide a positive response to a Command Request
NO	Allows the user to provide a negative response to a OFF Command Request.
MODE	Commands the MIP-921 <sup>s</sup> to select the next Command Request Level.
ENTER	Commands the MIP-921 <sup>s</sup> to enter a specific data sequence.

### KEY COMBINATIONS

NO-ENTER	Commands the MIP-921 <sup>s</sup> to terminate a command or exit to a higher Command Request Level.
YES-ENTER	Commands the MIP-921 <sup>s</sup> to execute a Weekly Test.

MIP-921<sup>s</sup> Encoder/Decoder  
Front Panel Definitions  
Version 1

Figure 2



## CONNECTOR DEFINITIONS

**POWER....Input Power Jack.** Requirement is 9 to 14 volts DC

**COMM 1....RS232 Communications Port  
(1200 Baud)**

**I/O CONNECTOR....Main Signal Connector**

Pin 1....System Ground

Pin 2....Hold

Pins 3 & 4....Relay 2

Pins 5 & 6....Relay 1

Pins 7 & 8....Audio Output

Pins 9 & 10....Audio 2 In (Aux In/Input 2)

Pins 11 & 12....Audio 1 In (Input 1)

Pin 1....Audio Out  
Pin 2....Tx Data Out  
Pin 3....Rx Data In  
Pin 5....Signal Ground  
Pin 9....Relay 1

**COMM 2....RS232 Communications Port  
(9600 Baud)**

Pin 2....Tx Data Out  
Pin 3....Rx Data Out  
Pin 5....Signal Ground

**NOTE: I/O Connector is  
Removable**

## SIGNAL ADJUSTMENT

**AUDIO OUTPUT LEVEL....**Adjustment (one turn pot) for signal level of Audio Output  
Range....-40dBm to +8 dBm

## **MIP-921<sup>®</sup> Encoder/Decoder Back Panel Definitions**

**Figure 3**

**CG Out**....This connector is for the optional on-board character generator.

**EXT. Printer**....This optional port is for connection to an external serial printer.

**Wx Ant In**....This connector is for connection to an external weather antenna.

**FM Ant In**.... These connectors are for connection to an external FM antenna.

**AM Ant In**.... These connectors are for connection to an external AM antenna.

## UNIT SETUP

The setup procedures for the MIP-921<sup>s</sup> are divided into two parts. The first part is the physical installation of the MIP-921<sup>s</sup>, which includes mounting the unit and connecting it to the equipment necessary to make the MIP-921<sup>s</sup> a working system within the cable system. The second part of Unit Setup is programming the MIP-921<sup>s</sup> with all the data necessary for successful operation.

### Unit Setup – Section 1

#### Physical Installation

After removing the MIP-921<sup>s</sup> from its shipping container, perform the following steps to install the unit.  
**HELPFUL HINT:** Save the MIP-921<sup>s</sup> shipping container for return of the unit if necessary.

Check the contents of the shipping box that contained the MIP-921<sup>s</sup>. You should have received the following extra parts or pieces:

3.5" floppy disk	paper spool
12 pin I/O connector strip	6-ft. long-9 pin interface cable for computer programming
power cube	roll of paper

**NOTE:** Your MIP-921<sup>s</sup> is shipped with a fully charged on-board battery. There is no set up required for the battery.

1. Mount the MIP-921<sup>s</sup> into a 19-inch rack. There are four mounting holes on the MIP-921<sup>s</sup>, two on each side.  
**If connecting to external radios for inputs, follow steps 2 and/or 3.**
2. Install a shielded cable pair from the first message source (broadcast/weather radio signal, etc.) to the I/O connector marked Audio 1 In of the MIP-921<sup>s</sup>, as shown in Figure 3. The shield should be grounded at the source end. All MIP-921<sup>s</sup> audio inputs are 600 ohm balanced. Set the input signal level to an average of 0 dBm or 2 volts peak to peak. This level can be monitored and evaluated by the MIP-921<sup>s</sup> later in the software setup procedures.
3. Installation of the second message source is to the connector marked Audio 2 In of the MIP-921<sup>s</sup> via a shielded cable pair. This input is 600 ohm balanced. Set the input signal level to an average of 0 dBm or 2 volts peak to peak. This level can be monitored and evaluated by the MIP-921<sup>s</sup> later in the software setup procedures. **IMPORTANT NOTE: If External Audio 2 In is used Radio Slot C is not operational.**
4. Audio output for the MIP-921<sup>s</sup> transmission of EAS messages is wired to I/O connector also marked Aud. Out. This output has a rear panel level adjustment and drives loads of 600 ohms at 8 dBm. The adjustment operates in a counter clockwise direction for maximum output level and is identified as Audio Output Level.
5. If you are connecting the MIP-921<sup>s</sup> to override equipment that has a 9 pin EAS access point, connect a cable from COMM 1 of the MIP-921<sup>s</sup> to the 9 pin override equipment. You may wish to consult your

override equipment manufacturer for specific details of that equipment. Figure 3 details the pin out connection required. The serial data format is 8 data bits, no parity, one stop bit, and 1200-baud. The 12-pin I/O connector is also available for access to Relay 1 and Relay 2 contacts and audio output. (NOTE: Relay 1 can be accessed through COMM 1 and/or the I/O Connector on Pins 5 and 6.) Your MIP-921<sup>s</sup> should have come with a jumper wire installed from Pin 5 to Ground on the I/O Connector. This jumper allows for proper operation (control switching) of COMM 1 on MIP-921<sup>s</sup> to cable override equipment. (NOTE: If this jumper is not installed, COMM 1 will not activate your override equipment. If you must make your own jumper, a standard poly covered 18-gauge wire is recommended.) . **This jumper does not need to be connected if you are wiring directly to the relays on the I/O Connector.** See Figure 3 on page 7 for diagram of the I/O Connector.

6. Connection to the character generator is through the 9-pin connector labeled COMM 2. Figure 3 details the pin out connection required. The serial data format is 8 data bits, no parity, one stop bit, and 9600 baud. This connection requires a null modem cable. A null modem cable has pin 2 on one end of the cable that needs to be connected to pin 3 on the other end of the cable and vice versa. This null modem cable can be purchased at a computer store or you may use a straight through cable with a null modem adapter, which can also be purchased at a computer store.

**NOTE:** A null modem adapter can be purchased at most any computer store... i.e. Radio Shack catalog #26-264 or equivalent. COMM 2 port is compatible with Idea/onics and Cable Envoy character generators.

7. The MIP-921<sup>s</sup> on-board radios require external antennas in order to operate properly. Antenna type and placement is a function of each MIP-921<sup>s</sup> application. Radio reception must be noise free and clearly understood for efficient decoding.
8. Install the MIP-921<sup>s</sup>'s power supply into the jack marked "Power In" located on the rear panel.  
**IMPORTANT NOTE: To ensure proper operation, the MIP-921<sup>s</sup> chassis must be grounded to earth ground.** Plugging the 1/8 inch jack into the MIP-921<sup>s</sup> and then the power cube into the outlet will power up the unit, causing the MIP-921<sup>s</sup> to go through a power up routine and indicate "MIP-921 READY" on the LCD. The internal battery can operate the MIP-921<sup>s</sup> for up to 12 hours depending upon the charge in the battery at the time of connection and amount of use it encounters. Continue the installation process by plugging in the wall mount power supply into 120 VAC. **IMPORTANT NOTE: The MIP-921<sup>s</sup> internal battery is active when AC power has been removed from the unit while the 1/8 Inch power jack is plugged into the back of the unit. If the 1/8-inch power plug is removed from the back of the unit, the internal battery is not activated.** The internal battery is a brand number PS-612, brand Power Sonic or equivalent.

**NOTE:** If the 120 VAC power to the MIP-921<sup>s</sup> is off for an extended period of time, (1-10 hours) (such as during a power outage or if the 120 VAC power supply has been unplugged) it takes up to 36 hours for the battery to completely recharge. It is recommended that the MIP-921<sup>s</sup> power supply be plugged into a surge suppressor or uninterruptable power supply (UPS) to protect the unit from power spikes and dips caused by lightning.

**Commercial Hold....**The ability to hold outgoing messages for up to 10 minutes is available on the MIP-921<sup>s</sup>. To activate this feature PIN 2 on I/O Connector needs to be connected to external equipment that will control the MIP-921<sup>s</sup>. This equipment must provide a ground for the hold feature to be activated. If no ground potential is applied to PIN 2, the MIP operates as normal.

## **Relays**

In addition to the basic installation, other MIP-921<sup>s</sup> external interfaces that can be installed are as follows:

1. Digital output (Relay 1) – This is a normally open contact pair with a maximum rating of 24 VDC at 0.5 amps. This relay is active (closed) when any of several HOT MESSAGE protocols activate it. Further explanation regarding further protocols can be found in Appendix B, C & D.
2. Digital output (Relay 2) – This is normally open contact pair with a maximum rating of 24 VDC at 0.5 amps. This relay is active (closed) when any of several HOT MESSAGE protocols activate it. Further explanation regarding further protocols can be found in Appendix B, C & D.

## UNIT SETUP – SECTION 2

### UNIT PROGRAMMING

There are two methods available for the user to program or configure the MIP-921<sup>s</sup> once installed; via the PC interface or front panel setup routines. No matter which programming method is used, the information required from the user is identical. This section is divided into three subsections; General Descriptions; PC Programming; and Front Panel Programming. The General Description paragraph provides a detail explanation of the information a user must know in order to program the MIP-921<sup>s</sup>. The PC Programming and Front Panel Programming paragraphs instruct the user on the steps necessary for MIP-921<sup>s</sup> configuration.

#### General Description

The information described below is required before the MIP-921<sup>s</sup> can perform its functions according to FCC rules. Each particular set of information has a default setting which is factory set and can be left at that setting. In most cases, approximately half of the default settings will do the job. Since this information is critical to the operation of the MIP-921<sup>s</sup>, it is protected by the password. If the password is lost for any reason, the default setting for the password (123) can be reinstated by activating the default settings. **WARNING:** All previous settings will be defaulted along with the password, therefore, if default start up has been activated, reprogramming is required.

To activate the DEFAULT SETTINGS, unplug the power cube from the outlet and then remove the 1/8" power jack from the back of the MIP-921<sup>s</sup> and wait 10 seconds. While holding in the ENTER key, plug the power jack back into the MIP-921<sup>s</sup>. Then plug the power cube into the outlet. The default settings will then be loaded into the MIP-921<sup>s</sup>.

**CATV Identification....**The user enters their cable ID number and it will be used in transmitting the header message, when the station transmits an EAS message. The cable ID number contains only six digits, whereas, the space available is 8 digits. Therefore, use a space in the last two digits.

**Originator Code....**The originator code is the identifier for which site or station created and transmitted the EAS message. There are five options that can be programmed:

Broadcast/Cable System	- EAS
Civil Authorities	- CIV
Emergency Action Network	- EAN
National Weather Service	- NWS
Primary Entry Point	- PEP

**Change Password....**The user has the opportunity to change the password authorizing access to this setup program. The password is limited to three digits between 0 and 9.

**EOM Timeout....**This timeout is the amount of time the MIP-921<sup>s</sup> will wait before it terminates an incoming EAS message if it does not receive a valid EOM code. The default for the EOM timeout is 120 seconds (2 minutes) and can be set for up to 240 seconds (4 minutes).

**Configuration Selection....**How the MIP-921<sup>s</sup> is utilized with respect to active EAS message inputs (total of four), message printing and the need for automatic weekly tests must be communicated to it. The user selects: (1) which active inputs you wish to have sensors applied to. The sensors will flash the Alert Light on the MIP-921<sup>s</sup> front panel if an incorrect audio level occurs on any of the inputs selected. (2) to print all messages or only HOT messages, and (3) command the MIP-921<sup>s</sup> to send weekly tests between the hours of 1 AM and 2 AM every six days.  
**IMPORTANT NOTE:** The MIP-921<sup>s</sup> monitors any active input ports and will blink the

**ALERT LED** if low or absent audio signal is detected on the port, therefore, it is important that the user properly identify all inputs that are used.

**External Interface Setting**

**Protocol Type** – This references Appendices B, C and D and allows the user to choose protocol 1, 2, or 3 depending on their override equipment configuration.

**Character Generator Type** – The default setting (1) is the proper selection.

**Channel (1-99)** – Select the channel that cable viewers will be instructed to “Tune To” for details of the EAS event.

**Cycle Time (1-99)** – Select, in minutes, how long a “Tune To” channel (if used) will continue after an EAS “HOT MESSAGE” has been received.

**TwoTone Time Duration**....The user sets the duration of the TwoTone attention signal sent out during an EAS message transmission. 8 seconds is the default. (FCC rules only require 8 seconds.)

**Radio Type Configuration**....The user selects the proper radio type for each Radio Slot. If an on-board NOAA Weather Radio is used it must be installed in Radio Slot A. **IMPORTANT NOTE:** If Radio Slot C is operational then Audio 2 In on the I/O Connector cannot be used.

**Radio Tuning**....The user tunes the on-board radios to the proper stations enabling the MIP-921<sup>s</sup> to monitor incoming EAS messages. The user is prompted to set the frequency for each Radio Slot. A Radio Slot that has been configured to be empty will not accept a frequency. This tuning feature is for on-board radios only.

**Counties Monitored**....The user selects counties that the MIP-921<sup>s</sup> monitors to a maximum of 25. The software allows the user to select any of the 50 states and any county in the 50 states, as well as the District of Columbia and territories and possessions of the U.S. Typically, the user selects the individual counties in their area. Include all counties on this list from where the user would expect to receive an EAS message. Keep a copy of this list near the MIP-921<sup>s</sup> for reference.

**Time and Date**....The user identifies the time zone difference corresponding with the MIP-921<sup>s</sup> installation. This time zone difference is explained further in this manual and relates to the Universal Time used in EAS, which is also referred to as Greenwich Mean Time. The user also sets the current local time and date for the MIP-921<sup>s</sup>. “X” the Active if you are in Daylight Savings Time.

**TERM Generation**....The most important function of the MIP-921<sup>s</sup> is to recognize and react to specific EAS messages that it receives and decodes. In order to do this, the user must program the MIP-921<sup>s</sup> with sets of information called a TERM. A TERM contains the specific event and associated county that is matched to all incoming EAS messages. If there is a match, then the MIP-921<sup>s</sup> classifies that message as a HOT MESSAGE and will react accordingly. There are approximately 124 events that can be part of a TERM. **IMPORTANT NOTE:** Emergency Action Notices (EAN), Emergency Action Termination (EAT), Required Weekly Tests (RWT) and Required Monthly Tests (RMT) are pre-programmed into the MIP-921<sup>s</sup> and will be processed automatically by the unit. No programming is required to process these messages.

### **Explanation of Testing Requirement**

#### **RWT (Required Weekly Test)**

If your MIP-921<sup>s</sup> receives a Required Weekly Test (RWT) from any of your monitoring sources, it will automatically decode the message and the printer will log a description of the activity. The printout should include the ID Code of the originator of the test. The purpose of this RWT is to verify that you have a good communication link from your monitoring source.

As a cable operator, you are also required to generate your own RWT each week which overrides your cable system. You may do this by choosing the automatic weekly test option as described on Page 12 or you may initiate a weekly test from the front panel as described on Page 5. The printout should include the ID Code, which was entered in the MIP-921<sup>s</sup> setup indicating that the MIP originated the message. The purpose of this test is to verify the system is operational.

#### **RMT (Required Monthly Test)**

You are required to retransmit a received Required Monthly Test (RMT) once a month. Once the MIP-921<sup>s</sup> receives the RMT from any port, it prints the message with the ID code of the originator included. Once the printing is complete the MIP-921<sup>s</sup> retransmits the test message to the override equipment and logs the activity on the MIP-921<sup>s</sup> printer with originator code of the cable system which indicates retransmission.

**HOT MESSAGE....**Associated with each TERM, is a set of optional actions/functions that the user can select to tailor the response of the unit to that particular TERM. The following are those action items.

1. Activate SAM Warning...This action item only applies to special equipment that is not included or required by EAS rules. If selected, the unit will transmit a DTMF code via the on-board modulator. If this action detail is selected, the SAM™ Home Receiver would activate its internal siren for the term it is associated with.
2. Activate SAM Watch....This action item only applies to special equipment that is not included or required by EAS rules. If selected, the unit will transmit a DTMF code via the on-board modulator. If this action detail is selected, the SAM™ Home Receiver would activate the LED on the face of the SAM™ Home Receiver for the term it is associated with.
3. Valid, Input 1....If selected, then a received message from Audio 1 In will be processed as a HOT MESSAGE.
4. Valid, Aux. In...If selected, then a received message from Audio 2 In/Radio Slot C will be processed.
5. Valid, Radio Slot A....If selected, then a received message from the internal Radio Slot A will be processed.
6. Valid, Radio Slot B....If selected, then a received message from Radio Slot B will be processed.
7. Activate Protocol...If selected, the MIP-921<sup>s</sup> will control the external override equipment. If this is not selected, the override equipment will not be activated for this event.

An example of a Valid Input Selection for items 4 through 7 (above): If you wish a Tornado Warning from Radio Slot A only, select Valid, Radio Slot A and Activate Protocol to override the cable system with the Tornado Warning.

## PC Setup Routine

The primary and recommended method for programming the MIP-921<sup>s</sup> is through the use of a personal computer. The user can connect his or her personal computer to the MIP-921<sup>s</sup> utilizing a supplied interface cable (connected to the "Host In/Out" 9 pin "D" connector on the front panel) and PC software. The software is menu driven and user friendly, guiding the user through the process of setting up the MIP-921<sup>s</sup> for operation. The following assumes basic computer literacy and details the installation of the software.

### Installing Software

The software is menu driven and user friendly, guiding the user through the process of setting up the MIP-921<sup>s</sup> for operation. The following assumes basic computer literacy and details the installation of the software.

1. Place the MIP-921<sup>s</sup> software disk in your computer's 3.5" floppy drive. This may be configured as drive A or drive B in your computer. For the rest of this procedure, the discussion will refer to using drive A. If your floppy drive is labeled B, substitute "B" at every location the manual refers to "A".
2. At the DOS prompt (C:>); select the floppy drive by typing "A:!".
3. At the drive A prompt (A:>), type in "install". This will cause the system to install the files on the hard drive "C" in a directory called c:\mip921. **IMPORTANT NOTE:** The MIP-921<sup>s</sup> software operates on most personal computer's with a 286 processor, or newer, and sets up the directory MIP-921 on your computer. **It is necessary to exit all application programs (including Windows) to insure there are at least 560 kilobytes of free RAM.** The amount of free RAM can be determined by typing "mem" at the DOS prompt.
4. At the MIP-921<sup>s</sup> prompt (C:\MIP921>), type in "MIPS".
5. The "MIP-921<sup>s</sup> EAS Management Software" window screen appears and the user is ready to program the MIP-921<sup>s</sup>. At this point, please enter the default password which is "123".

The MIP-921<sup>s</sup> setup procedure is straightforward and prompts the user with explanations on each menu screen. Following the menu from start to finish allows the user to program all the necessary features of the MIP-921<sup>s</sup>. The software allows selection of commands through the use of a mouse, or keyboard selection. When using the mouse, move to the desired location and click the mouse to select the option.

When using the keyboard, the user can press the bolded letter associated with each menu choice to implement that command. Several helpful things to remember are the use of the TAB, SPACEBAR, and ARROW keys. The TAB key allows the user to advance through each of the options on a screen. For example, the first screen has three options: enter password, OK, or cancel. Depression of the TAB key allows the user to alternate between each of the three choices. Pressing the ENTER or SPACEBAR key selects the highlighted option. On some screens, once the user tabs to an option there are additional choices that can be made. By using the ARROW UP and ARROW DOWN keys, the user can select these sub-options.

Another helpful hint to remember is the use of the ALT key on the keyboard. This key is especially important if the computer does not have a mouse. On the main MIP-921 menu screen, there are two major categories available on the top row of the display: FILE and SETUP. Holding down the ALT key and the first letter of one of the major categories will select that software option. Once the option is selected, the ARROW keys can be used to select the appropriate operation.

To access the software for future use, go to the folder "MIP921" and create a shortcut for the following file: MIPs.exe. Transfer the shortcut to the system desktop for easy access.

**NOTE:** It is possible to run the MIPS program off the A drive directly. If you choose to operate off the A drive, the program will run slower. At the DOS C prompt, type "A:" and Enter to get to the A drive. At the A prompt, type "MIPS" and Enter. The programming will come up.

**Communications Link...**The user must select a local connection to program the MIP-921<sup>s</sup>. **Remote connection cannot be used to program the MIP-921<sup>s</sup>.** Once the selection has been made the programming software guides the user through the setup parameters.

**Local Connection....**The MIP-921<sup>s</sup> HOST IN/OUT on the front panel has been designed to interface to a PC using a DB9 male/female straight through cable. The cable to the PC must be straight through configuration where pin 1 is tied to pin 1, pin 2 to pin 2, pin 3 to pin 3, etc. A 6-foot cable with 9 pin connectors on both ends is provided. The male end of the cable plugs into the HOST IN/OUT connector of the MIP-921<sup>s</sup> unit. If your computer accepts only 25 pin connectors, a 9 pin to 25-pin adapter can be purchased at any computer supply store. NOTE: Make sure this is a "straight through" adapter. DO NOT use a "null modem" type adapter. If you have a 9 pin to 25-pin cable, it would be acceptable to use this as long as it is not a null modem cable.

**Communication Port Initialization....**This is the most important part of the setup procedure. When selecting the COMM port on your computer associated with the connector for the MIP-921<sup>s</sup> cable, insure that no other devices are connected to the same COMM port; such as a mouse, or internal modem. This COMM Port of your computer should be set for 2400 baud; 8 data bits; 0 parity; 1 stop bit and X on X off flow control. Once the COMM port selection is made, select the TEST CONNECTION option verifying the PC can communicate with the MIP-921<sup>s</sup>. **(In order to communicate with the MIP-921<sup>s</sup> from a personal computer you must first put the MIP-921<sup>s</sup> into a program mode. See Page 23 - "Load Config File".)** The MIP-921<sup>s</sup> software will automatically setup the COMM protocol necessary to communicate with the MIP-921<sup>s</sup>. **IMPORTANT NOTE:** The most common problem during this phase of the setup is that the cable is not pin to pin compatible, or the cable is not connected to the correct location. Follow the steps of the Setup Wizard to complete the programming of the MIP-921<sup>s</sup>.

**Downloading Stored Messages....**Stored messages can be downloaded using either a computer or serial printer connected to the "Host In/Out".

**Computer...**Stored messages can be downloaded using a computer connected to the "Host In/Out". To download to the computer, a terminal program such as Hyperterminal is used. You must select the COMM port on your computer and initialize it as described above in "Communications Port Initialization". Once the COMM port is initialized, use the straight thru programming cable that was sent with the MIP to connect the "Host In/Out" port to the COMM port on your computer. Next, use the front panel programming to get to level 2, "Print Stored Message". Press the "Yes" key. The LCD will display "Use Host Port?" Press the "Yes" key and it should download the messages to the computer. Once the messages are downloaded, a text program can be used to format the data. The "Clear MSG Memory" function will clear all stored messages.

**Serial Printer...**If a serial printer is connected to the "Host In/Out" port, see the explanation in the Unit Operation section on pages 22 and 23. . Next, use the front panel programming to get to level 2, "Print Stored Message". Press the "Yes" key. The LCD will display "Use Host Port?" Press the "Yes" key and it should download the messages to the computer. Once the messages are downloaded a text program can be used to format the data. The "Clear MSG Memory" function will clear all stored messages.

**Front Panel Programming....**Programming of the MIP-921<sup>s</sup> is recommended via the personal computer. If a personal computer is not available programming can be accomplished via the unit's front panel. The programming is accomplished via a menu driven format that prompts the user through messages on the LCD display. Each question or command shown on the display requires the user to press the YES or NO front panel buttons. If there is no activity within 30 seconds of message display, the MIP-921<sup>s</sup> unit returns to the Ready state. In addition to the YES and NO keys, the MODE key, in certain situations, will reverse the sequencing of Letters and Numbers being selected by the process. Pushing the NO and ENTER keys together always acts as a CANCEL and EXIT from the process or routine function.

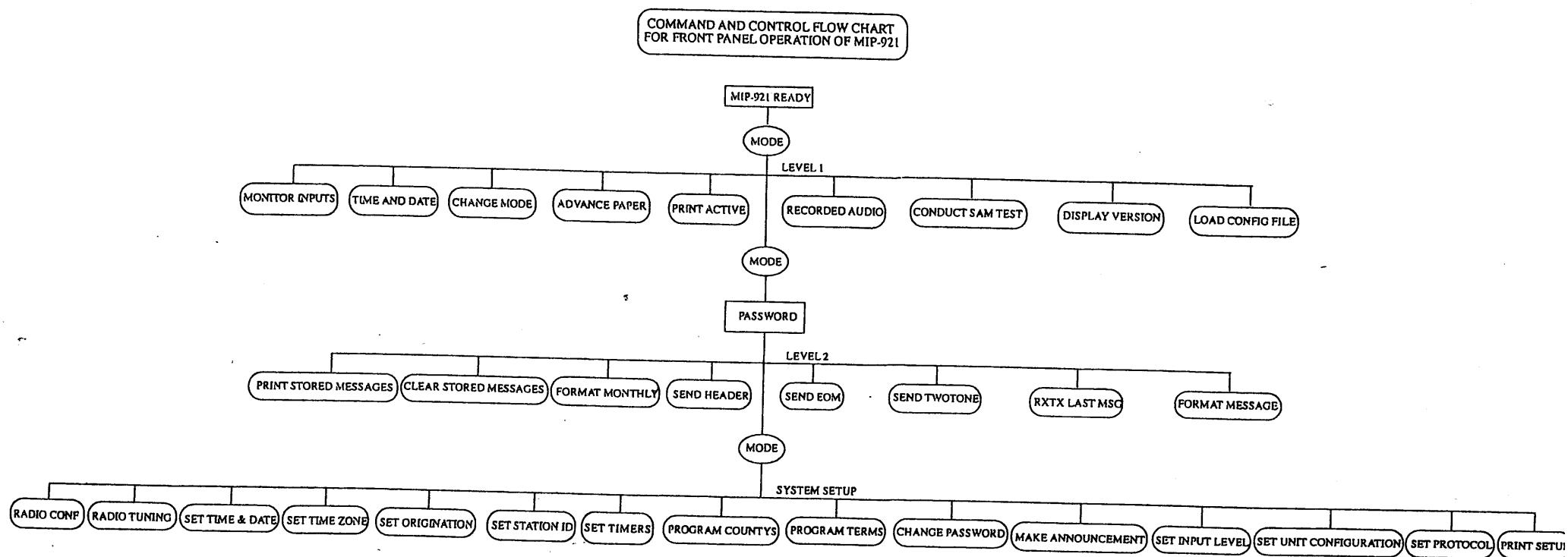


FIGURE 5

The following topics are in Level 1. These can be reached without entering the password and are considered routine commands.

**LEVEL 1**

Monitor Inputs  
Time and Date  
Change Mode  
Advance Paper  
Print Active  
Recorded Audio  
Conduct SAM Test  
Display Version  
Load Config File  
Monitor Inputs

To familiarize oneself with the MIP-921<sup>s</sup>, it is recommended that you step through the available commands in Level 1. Refer to the Command and Control Flow Chart (Figure 5) for a detailed look at the topics at each level for the MIP-921<sup>s</sup>. First depress the MODE key. Briefly, "Level 1" will appear on the LCD followed by "Monitor Inputs". Depress the NO key and the LCD will show "Time and Date". Depress the NO key again, it will show "Change Mode". Depress the NO key again and the LCD will display "Advance Paper". Depress the NO key, and it will show "Print Active". Depress the NO key, and it will show "Recorded Audio". Depress the NO key, and it will show "Conduct SAM Test". Depress the NO key, and it will show "Display Version". Depress the NO key, and it will show "Load Config File". Depress the NO key again, and the LCD will show "Monitor Inputs".

The MIP-921<sup>s</sup> has the following Setup routines:

**Setup Mode....** The system setup mode is entered by pressing the MODE key once and waiting 2 seconds and pressing the MODE key again. You will be asked to enter the password. (NOTE: To prevent tampering, the MIP-921<sup>s</sup> allows a limited amount of access time to enter the password.) The default password is "123". If you enter the wrong code, it will take you back one level which will say "Monitor Inputs". To get back, press the "MODE" key and start over. To enter the password "123", complete the following steps:

- |              |  |
|--------------|--|
| First Digit  | - Press the "NO" key once to change the first digit to 1.        |
| First Digit  | - Press the "YES" key once to display the second digit.          |
| Second Digit | - Press the "NO" key twice to change the second digit to 2.      |
| Second Digit | - Press the "YES" key once to display the third digit.           |
| Third Digit  | - Press the "NO" key three times to change the third digit to 3. |
| Third Digit  | - Press the "YES" key once.                                      |

**Radio Configuration....** A standard MIP-921<sup>s</sup> has two on-board AM/FM radio receivers available. An optional third radio may be added. It can either be a NOAA weather receiver or an AM/FM receiver.

**Note:** The NOAA weather receiver must be located in Slot A. Also, if Radio Slot C is operational then Audio 2 In on the I/O Connector cannot be used. This routine has three parts, one for Radio Slot A, one for Radio Slot B and one for Radio Slot C. The user must select which type of radio is used in each slot. Choose NWS for NOAA receiver, FM, AM, or None if no on-board receiver is located in that particular slot. Configuration of the radios from the front panel is performed after entering the system setup mode in level 2. Once into the setup mode the LCD will display "RADIO CONFIG". Depress the "YES" key. The LCD will display "Radio Slot A?". Depress the "YES" key to configure Radio Slot A. The four choices will be displayed. Depress the "NO" key to scroll through the radio types and depress the "Yes" key when the desired radio type is highlighted. To select Radio Slot B, depress the "NO" key when the LCD displays "Radio Slot A?". The LCD will display "Radio Slot B?", select the "YES" key for Slot B or the "NO" key for Slot C. Radio Slots B and C cannot be configured for NWS.

**Radio Tuning**....Upon completion of Radio Configuration the user must tune the radios in each available slot. Tuning of the radios from the front panel is performed after entering the system setup mode in level 2. Once into the setup mode the LCD will display "RADIO CONFIG. Depress the "NO" key. The LCD will display "RADIO TUNING". Depress the "YES" key. The LCD will display "SLOT A?". Depress the "YES" key to set this radio or the "NO" key to move to the next radio slot. If Radio Slot A is configured for NWS radio then refer to the "Set Internal Weather Radio" instructions below. For all Radio slots that are configured for AM or FM, refer to the AM/FM Tuning instructions below.

**RF Levels for FM Radios**....The RF level for the FM Radio is -40 dBmV.

**Set Internal Weather Radio**....If you entered "YES" to "Radio Slot A?" and it is configured for NWS, the LCD will display one of the seven weather radio frequencies beginning with 162.400 MHz. The routine will present each of the seven for selection. Once the NOAA Radio Tuning option is selected, pressing the NO key cycles through the available frequency choices. Pressing the YES key will lock in the radio frequency and switch to the SPEAKER monitoring mode for 30 seconds. Monitoring can be cancelled by pressing any key.

**AM/FM Tuning**....If applicable, the AM receiver is tunable from 550 KHz to 1720 KHz in 10 KHz increments. Once the AM Radio Tuning option is selected, pressing the NO key changes the frequency in 10 KHz increments, while pressing the MODE key changes the frequency in 100 KHz increments. The FM receiver is tunable from 87.5 MHz to 108.5 MHz in 0.1 Hz increments. Once the FM Radio Tuning option is selected, pressing the NO key changes the frequency in 0.1 MHz increments, while pressing the MODE key changes the frequency in 1.0 MHz increments. Once configured, pressing the YES key will lock in the frequency and allow for 30 seconds of monitoring over the SPEAKER. Monitoring can be canceled by pressing any key.

**Time/Date Entry**....This routine allows for the setting of the current time and date in the unit. The time is entered with hours and minutes only. Hours are on a 24 cycle ranging from 0 to 23 and minutes range from 0 to 59. **IMPORTANT NOTE:** Leading zeros must be used with all entries. The date is entered as date (1 thru 31), month (thru 12), and year (only the last two digits, i.e. 97).

Entry of the time and date is accomplished by the depression of the YES and NO keys. The display will show the date and a default entry (indicated by the flashing cursor). If the entry is the desired one, pushing the YES key will select it. Depression of the NO key will cause the routine to step to the next logical selection. This process continues until the desired entry is displayed. Once an entry is selected, the routine shifts to the next digit/character or category. Pushing the MODE key will reverse the stepping process. Once the time and date have been entered, the routine will exit and step to the next Setup routine.

**Timezone**....This routine allows the user to select the difference (in hours) between local time and Universal, or Greenwich Meantime (GMT). The time zone differences are as follows:

Atlantic – 4 hour difference  
Eastern – 5 hour difference  
Central – 6 hour difference  
Mountain – 7 hour difference

Pacific - 8 hour difference  
Alaskan - 9 hour difference  
Hawaiian – 10 hour difference

**Origination Code....**This routine allows the user to select one of the five origination codes. The codes are individually displayed for selection.

**CATV Identification Code....**This routine allows the user to enter their six character CATV identification code. This entry uses the same protocol as the time/date entry.

**Set Timer....**There are two timers that are available for adjustment by the user:

Message Timeout....Entry is one digit at a time with Leading Zeros being required.

TwoTone Timeout....The user sets this timeout from 8 to 25 seconds.

**Counties....**The unit requires that county NAMES and NUMBERS that will appear in EAS messages received by the unit be programmed by the user. The entry process requires a six digit county number and an associated name up to a maximum of 10 letters. County names with numbers are included in an appendix of this manual. The routine allows the user to list/display currently stored counties (one at a time), delete a currently stored county or add a new county.

When selected, the routine will display the first county name it has stored. If there are no counties stored, then the display will show "empty". When county names are stored in the MIP-921<sup>s</sup>, depression of the YES key asks the user whether the displayed county name should be deleted. Depression of the YES key deletes the county name, while depression of the NO key will display the next county name. When the last county name is displayed, depression of the NO key will display "ADD A COUNTY". If the NO key is depressed the MIP-921<sup>s</sup> returns to the top of the stored county list and displays the appropriate county information again. County names come with varying letter counts, thus, to terminate the county name entering process, press the ENTER key. Selection of the YES key allows the user to start the process of entering the NAME and NUMBER of a new county. After depressing the "YES" key a flashing cursor will appear on the LCD. Depress the "YES" key to select the first letter of the county you wish to enter. Depress the "NO" key to select the next letter of the county name. Depress "YES" key to move the cursor to the next letter's position. You may enter up to 16 characters to define the county. If the county name has less than 16 characters, depress the "YES" key to move the cursor to the furthest right position on the LCD until "ENTER NUM:" appears on the LCD. Depress the "NO" and "YES" keys to enter the correct FIPS Code for the county you have just setup. This code is located in the rear of the MIP-921<sup>s</sup> owners manual. Example: Adair County in Missouri would be 029001.

**TERMs....**The unit can screen, match, or filter an EAS message for specific operations by comparing the message with "TERMs" that are stored in the unit. A maximum of 124 TERMs can be stored. The process of listing, deleting, and adding TERMs is the same as the county process. The user can select the seven optional action items listed previously on page 15 (HOT MESSAGE section) of this manual.

**Password Change....**This routine allows the user to change the three digit password. To change the password you must be in Level 2 programming. (Password Protected) Move through the Level 2 selections until you see "Change Password" on the LCD. Depress the "YES" key. The LCD will display "New Password". Depress the "NO" key to enter the number you desire. Upon reaching the desired number, depress the "YES" key to move the cursor to the next location to the right of the number you have just selected. Again use the "NO" and "YES" keys to make your selection. Once the "YES" key has been depressed the 3<sup>rd</sup> digit location will appear with the flashing cursor. Enter the desired 3<sup>rd</sup> digit by performing the same process as used in selecting digits 1 and 2. Depress the "YES" key to complete the password entry process. You have now changed your password and will need to enter your new number any time you wish to enter Level 2 programming from the front panel or attempt any MIP-921<sup>s</sup> access via a personal computer.

**Make Announcement....**This routine allows the user to record a voice message and store it in the "TUNE TO" message memory device. To record a message you must use the model #972 MIP audio interface device. This device connects to the front panel 9-pin Host In/Out Connector on the MIP. The

972 accepts a 1/8-inch monaural jack. The interface can be used with a microphone, such as a Radio Shack 33-3014 or equivalent. A cassette recorder or other source of recorded audio can be used instead of a microphone as long as at least 200 millivolts peak to peak audio is available at the input of the 972 interface device. The available length of time allowed for recording this message is 60 seconds. You may record a shorter message that is less than 60 seconds, but keep in mind that the length of the message you have created will determine how long your "Tune To" message screen will stay active.

**To Make A Prerecorded Announcement...**From the system setup mode in level 2, depress the "NO" key until the LCD displays "MAKE ANNOUNCEMENT". Depress the "YES" key and the display will show "Start Recording?". Depress the "YES" key and begin your message. The LCD will show "Stop Recording?". Once you finish recording, depress the "YES" key and the LCD will show "Start Recording?". Depress the "NO" key and the display will show "Playback?". Depress the "YES" key to listen to a playback of your message through the MIP-921<sup>s</sup> front panel speaker. Your message is stored at this time.

**Set Input Level....**The unit has two external audio inputs for monitoring EAS messages. In order to achieve maximum reliability in decoding messages, the signal level from the external source must be at or above the minimum requirements. Each input, when selected in this routine, is monitored both through the speaker and a level measuring process, which displays a level number. The external source's signal level must be adjusted to meet the minimum level number for each input. If the signal is music, then levels 25 through 30 are satisfactory. Since the level is constantly changing, the user must judge the levels based on average readings. If the signal is spoken voice, then the levels should be between 20 and 25. Once a level is adjusted, pushing any key will exit the process or routine. This level set routine is not required for the two on-board radios, as they are set at the factory. NOTE: If Radio Slot C is operational then Audio 2 In on the I/O Connector cannot be used.

**Configuration....**The unit has several options that may or may not be utilized in any particular application. Therefore, the user must select those options they wish to use. The following configuration options are:

1. External Input 1....If selected, the MIP-921<sup>s</sup> will monitor External Audio 1 In for minimum signal levels. If this option is not selected, the MIP-921<sup>s</sup> can still process messages from External Audio 1 In, but no indication of low signal level will be given.
2. Aux. IN....If selected, the MIP-921<sup>s</sup> will monitor External Audio 2 In/Radio Slot C for minimum signal levels. If this option is not selected, the MIP-921<sup>s</sup> can still process messages from External Audio 2 In/Radio Slot C, but no indication of low signal level will be given.
3. Radio Slot A....If selected, the MIP-921<sup>s</sup> will monitor Radio Slot A for minimum signal levels. If this option is not selected, the MIP-921<sup>s</sup> can still process messages from the Radio Slot A, but no indication of low signal level will be given.
4. Radio Slot B....If selected, the MIP-921<sup>s</sup> will monitor Radio Slot B for minimum signal levels. If this option is not selected, the MIP-921<sup>s</sup> can still process messages from Radio Slot B, but no indication of low signal level will be given.
5. Print All Messages....If you select this option, every EAS message that comes into the MIP-921<sup>s</sup> will be printed in the log via the on-board printer. If you choose not to select this option, only HOT MESSAGES are printed. See definition of HOT MESSAGE on Page 14.
6. Auto Weekly Test....If selected, the unit will, once every 6 days, transmit a weekly test message between the hours of 1 and 2 AM local time.

**Set Protocol....**This routine allows the user to select one of three action protocols to execute when the MIP-921<sup>s</sup> receives a HOT MESSAGE. Refer to Appendix B, C, and D for a description of the three protocols. The Character Generator Type refers to the CG that is being interfaced with the MIP-921<sup>s</sup>. It must be set to 1. Channel Number and Cycle time must be entered when the user elects to use either Protocol 1 or Protocol 2. The Channel Number refers to the cable channel that the "Emergency Message" is going to be displayed on. The cycle time refers to the amount of time that the "Emergency Audio and

Video" message are displayed on the selected channel.. The first two selections are single digit entries while the last two selections being a two digit input.

**Print Setup**....Selecting this routine will cause the unit to print all available configuration data with the on-board printer. This selection can be a very useful troubleshooting tool and be used for verification of your program settings.

## UNIT OPERATION

In most applications, the MIP-921<sup>s</sup> will operate in the automatic mode. Most, if not all, incoming EAS messages will be processed and managed without operator interaction. The MIP-921<sup>s</sup> needs no real time operating commands from the user.

However, the need to align or troubleshoot the unit, or the EAS system, will be necessary from time to time. Also the ability to originate and send an EAS message is required by FCC rules. For these reasons, there are two interfaces (human to machine) offered by the MIP-921<sup>s</sup>. The local interface is implemented with the front panel keys, display and menu driven software. A remote interface is provided via the telephone circuit.

There are three main modes of operation for the MIP-921<sup>s</sup>: (1) waiting for an EAS message; (2) receiving and processing an EAS message; and (3) creating and sending an EAS message.

**Message Monitoring**....While in this mode, several functions can be carried out by the MIP-921<sup>s</sup>. These functions are separated into three different Command Levels to make it more user friendly and convenient. The first level contains function commands that are often used and need to be selected quickly. The second level has function commands that are not used as often. Both the first and second level commands are "On Line" commands. "On Line" commands are carried out by the MIP-921<sup>s</sup>, while it is monitoring for an incoming EAS message.

The third level function commands (most are creating and sending EAS messages) are "Off Line" commands. The MIP-921<sup>s</sup> is not monitoring for EAS messages when processing an "Off Line" command. When the MIP-921<sup>s</sup> is "Off Line" the Green LED is not on.

Also available are blind commands. That is, there are no command messages displayed on the LCD display, only the "MIP-921 READY" message. Once the keys are pushed, the command is executed. The following are the entry-level commands, with associated front panel keys and a brief description of the function.

Display Last Received Message	ENTER Key	Will scroll the last message received if still ACTIVE. If last message is not active and the ALERT light is blinking, the LCD will display the error message.
Enter Command Level 2	MODE Key	Will enter and display level 2 function commands.
Execute Weekly Test	ENTER and YES Keys	Will transmit an EAS weekly test message.

The first level commands are displayed one at a time on the LCD display. By pushing the YES key, the user is selecting that command for execution. By pushing the NO key, the user is rejecting that command and asking that the next command be displayed. To exit this level and return to the entry level, the user pushes the ENTER and NO keys simultaneously. To go to the next level, push the MODE key. The following are the first level commands and a brief description of the functions.

<b>Monitor Inputs</b>	There are four audio inputs, each a potential source of an EAS Message. To monitor these signals via the front panel speaker, use this command. The monitor period lasts for 2 minutes unless it is terminated by the user by pushing any key. Input 1 monitors Ext. Audio 1 In. Input 2 monitors Ext. Audio 2 In/Radio Slot C. Input 3 monitors Radio Slot A and Input 4 monitors Radio Slot B.
<b>Time and Date</b>	The MIP-921 <sup>s</sup> will display the local time and date on the LCD display.
<b>Change Mode</b>	The MIP-921 <sup>s</sup> will execute the action options for a HOT MESSAGE when received, if the unit is in the AUTOMATIC mode. In cable television installations, this is the most likely selection. This mode is signified by a steady ON Green LED. The alternative mode to AUTOMATIC is the OVERRIDE mode. In this mode, all action options for a HOT MESSAGE are ignored. This command allows the user to switch between these two modes.
<b>Advance Paper</b>	This command causes the on-board printer to advance the paper one line. This is useful for loading paper into the printer.
<b>Print Active</b>	The MIP-921 <sup>s</sup> will print ZCZC string of active messages.
<b>Recorded Audio</b>	The MIP-921 <sup>s</sup> records the audio of the last EAS message received. This command allows the user to play that message back through the speaker.
<b>Conduct SAM Test</b>	This command causes the MIP-921 <sup>s</sup> to transmit a DTMF code via the on-board modulator to activate the "Lights Only" on a SAM <sup>TM</sup> Home Receiver.
<b>Display Version</b>	This command will display the control E-prom that is installed in the MIP-921 <sup>s</sup> .
<b>Load Config File</b>	The MIP-921 <sup>s</sup> must be in this mode when modifying the settings using a PC and the HOST IN/OUT on the front panel of the unit.
<b>Print Stored MSG</b>	This command will cause the MIP-921 <sup>s</sup> to print all stored messages using the on-board printer.
<b>Use Host Port</b>	Pressing the "YES" key will cause the MIP-921 <sup>s</sup> to print all stored messages using the printer connected to the "Host In/Out" port on the front panel of the MIP.

Clear MSG Memory	This command will delete all stored messages.
Format Monthly	This will direct the MIP-921 <sup>s</sup> to automatically format a Required Monthly Test message for transmission. Once this is done, the Send Header command can be used to send it.
Send Header	This will direct the MIP-921 <sup>s</sup> to transmit an EAS header with the last message formatted. If there are no formatted messages, the command is ignored.
Send EOM	This will direct the MIP-921 <sup>s</sup> to transmit an End of Message code.
Send TwoTone	This will direct the MIP-921 <sup>s</sup> to transmit the TwoTone attention signal.
Re-TX Last Message	This will direct the MIP-921 <sup>s</sup> to transmit the last received message in the ACTIVE file in its entirety.
Format Message	This allows the user to format an EAS message for transmission.

**Automatic Message Processing....**Once an EAS HOT MESSAGE has been received, there are several functions that the MIP-921<sup>s</sup> performs in order to get the message to the right equipment for dissemination to the public. The signaling and transferring of the message is accomplished by using the COMM ports and relay contacts located on the back panel. Due to the variety of equipment that the MIP-921<sup>s</sup> must interface to and communicate with, special and custom protocols have been established to meet this requirement. These protocols are described in detail in the appendices of this manual. Once the proper protocol has been selected, it can be entered into the MIP-921<sup>s</sup>, via the front panel function commands or through PC Setup Routine (Setup Level). This selection will cause the MIP-921<sup>s</sup> to execute the protocol during message processing.

**Default Restart....**A default restart is available on the MIP-921<sup>s</sup>. This default restart will reset the MIP with a preprogrammed list of counties and events. (NOTE: This will clear all of the counties and events previously programmed by the user.) To initiate the default start up, begin by unplugging the power cube from the outlet and then remove the 1/8 inch power plug on the back of the MIP. Wait 10 seconds, then while depressing the ENTER key on the front panel, re-power the unit by reinserting the 1/8 inch power plug and then plug the power cube into the outlet. You should now reprogram your MIP according to your specific needs.

**1050 Clip...**The MIP-921<sup>s</sup> will remove 1050 Hz warning tone used by NOAA stations for alerts. This tone is automatically removed on all external inputs and all on-board radios. Upon receipt of an EAS message, the MIP-921<sup>s</sup> immediately monitors the source for the presence of the 1050 Hz tone. If, after 5 seconds no tone has been detected, the MIP-921<sup>s</sup> begins to record the incoming message. If the MIP-921<sup>s</sup> detects a 1050 Hz tone within this 5 second time frame, it will then delay the on-board recorder until the tone is absent for 500 milliseconds. This 1050 Hz "clip" feature will operate on 1050 Hz tones received within ± 2%.

**Commercial Hold....** The commercial hold feature available on the MIP-921<sup>s</sup> allows the user to hold outgoing EAS messages for a period of up to 10 minutes after receipt of a Hot Message. See Page 9 for setup.

## DIAGNOSTICS

This section covers the troubleshooting procedures for fault conditions that may occur during the setup or operation of the MIP-921<sup>s</sup> Encoder/Decoder. The conditions list possible causes and the corrective action to take.

### Blank Message Display

A blank MESSAGE DISPLAY while the MIP-921<sup>s</sup> is on primary power is an indication of a processor malfunction. Take the MIP-921<sup>s</sup> out of service, restart in default, See page 24 – Default Restart.

### Blinking Alert LED

A blinking ALERT LED signifies that the system has detected a failure. Depressing of the ENTER key identifies the fault via the front panel LCD display.

The message NO AUDIO INPUT 1 signifies that the EAS message source connected to Audio 1 In is not present. This would also signify that this input was selected to be monitored in the setup routine on Page 15. Make sure that this input is an input you will be using in normal operation of the MIP. If you have selected this input correctly, you should verify that the audio signal is present coming into the MIP-921<sup>s</sup>. If the signal is not at the input to the MIP-921<sup>s</sup>, the problem is external to the unit. If the signal is present at the input to the MIP-921<sup>s</sup>, the problem is within the unit. The MIP-921<sup>s</sup> should be taken out of service and returned for repair. **IMPORTANT NOTE:** If there is more than one system failure, depression of the ENTER key will only display the most important failure. Once the displayed failure is corrected, depression of the ENTER key will display the next system failure.

### External Character Generator Doesn't Work

Make sure CG is connected to COMM port 2 on the MIP-921<sup>s</sup>. This port requires a null modem cable to interface with CG's. See page 9. Check that proper CG selection has been made in program setup on page 13, (Character Generator Type).

### Tune to Message Shows Wrong Channel

Check channel selection in program setup on page 13, (Channel 1-99).

### Tune to Channel Stays Active for Wrong Duration

Check program setup on page 13, (Cycle Time).

### MIP-921<sup>s</sup> Won't Take Programming from PC

Make sure that the cable you are using to connect the PC to the MIP-921<sup>s</sup> is a straight through type (No Null Modem). See pages 15 and 16. Also be sure that the MIP is in the Load Config File. See page 23.

### External Override Equipment Will Not Activate

Make sure that the jumper wires are properly attached to I/O terminal strip on the MIP-921<sup>s</sup>. See page 9.

### Unable to Decode Alerts

Check levels into the external audio inputs on the MIP-921<sup>s</sup>. This can be checked by reading 2V-pp at 600 ohms with an oscilloscope or by reading the digital level available on the MIP LCD. (See page 21 – Set Input Level) If unable to decode alerts from the on-board radios, check for proper levels as above by using Set Input Level, Page 21. Check for proper program setup including which counties and events you wish to decode. See pages 13 & 14. Use Print Setup on Page 22 to verify settings. Make sure protocol is active for the event in question. See Page 14 – HOT MESSAGE, #7.

**No "Tune To Channel" Operation**

Make sure "Tune To" override equipment is connected to Relay 2 terminals on the I/O Connector.  
See pages 29 and 30. Check for proper protocol selection in External Interface Setting. See page  
13.

## Appendix A

<u>Nature of Activation</u>	<u>Event or PIL Code</u>
<b>National Codes:</b>	
Emergency Action Notification	EAN
Emergency Action Termination	EAT
National Information Center	NIC
National Periodic Test	NPT
Required Monthly Test	RMT
Required Weekly Test	RWT
<b>Local Codes:</b>	
Tornado Watch	TOA
Tornado Warning	TOR
Severe Thunderstorm Watch	SVA
Severe Thunderstorm Warning	SVR
Severe Weather Statement	SVS
Special Weather Statement	SPS
Flash Flood Watch	FFA
Flash Flood Warning	FFW
Flash Flood Statement	FFS
Flood Watch	FLA
Flood Warning	FLW
Flood Statement	FLS
Winter Storm Watch	WSA
Winter Storm Warning	WSW
Blizzard Warning	BZW
High Wind Watch	HWA
High Wind Warning	HWW
Hurricane Watch	HUA
Hurricane Warning	HUW
Hurricane Statement	HLS
Tsunami Watch	TSA
Tsunami Warning	TSW
Evacuation Immediate	EVI
Civil Emergency Message	CEM
Practice/Demo Warning	DMO
Administrative Message	ADR

## APPENDIX B

### PROTOCOL 1

#### All Channels Notified to "Tune To" Pre-Selected Channel

##### **General Description**

This appendix describes the protocol when the MIP-921<sup>s</sup> receives a HOT MESSAGE and all TV viewers are notified to turn to a specific channel for receipt of EAS information. The number of the specific channel is selectable by the MIP-921<sup>s</sup> user via PC, or Front Panel programming.

**Installation Requirements....**This protocol requires the user to install wiring for Relay 1 on the 9 pin D connector at COMM port 1, and Relay 2 and audio output on the rear terminal strip. In addition, a character generator must be connected to COMM port 2 and, if installed, the 52.00 MHz modulator to the "Mod Out" rear connector.

**Operational Characteristics....**Upon receipt of the EOM, or time out, of a HOT MESSAGE, the MIP-921<sup>s</sup> will transmit via COMM port 2 to the character generator (CG) a "Tune To" command. This command consists of the message that will be displayed on all TV channels. After transmission of the CG command, the MIP-921<sup>s</sup> sends the SAM codes to the 52.00 MHz modulator for activation of in-home receivers. An "On" command is sent to the Hub Controller, if used, for blockage of the regular programming signal and distribution of the "Tune To" message to the TV viewers. Relays 1 and 2 are activated providing contact closures for external use. Activation of Relay 1 enables the display of the "Tune to Channel X" message on all TV channels. Relay 2 activation enables display of the EAS message on Channel X.

In addition to the visual display of the "Tune To" message, the MIP-921<sup>s</sup> will transmit out a "Tune To" audio message for transmission to all TV sets. This message provides an audible indication of the receipt of a HOT MESSAGE to the TV viewers. Upon completion of audio transmission, the MIP-921<sup>s</sup> sends an "Off" command to the Hub Controller and de-activates Relay 1.

Once the "Tune To" visual and audible indications are sent from the MIP-921<sup>s</sup>, the unit generates the EAS information for display on the pre-selected channel. This information is sent for visual display to the CG out COMM port 2 and for audible indication out the audio out pins on the rear terminal block. These visual and audible messages are sent out continuously for the time that was programmed in setup. At the end of the message period, the MIP-921<sup>s</sup> terminates transmission by the CG and de-activates Relay 2.

## APPENDIX C

### PROTOCOL 2

#### All Channels and Pre-Selected Channel Receive EAS Message

##### **General Description**

This appendix describes the protocol when the MIP-921<sup>s</sup> receives a HOT MESSAGE for display to all TV viewers, as well on a specific channel. The channel number that will contain the EAS information is selectable by the MIP-921<sup>s</sup> user via PC, or Front Panel, programming.

**Installation Requirements....**This protocol requires the user to install wiring for Relay 1 on the 9 pin D connector at COMM port 1, and Relay 2 and audio on the rear terminal strip. In addition, a character generator must be connected to COMM port 2 and, if installed, the 52.00 MHz modulator to the "Mod Out" rear connector.

**Operational Characteristics....**Upon receipt of the EOM, or time out, of a HOT MESSAGE, the MIP-921<sup>s</sup> will transmit out COMM port 2 to the character generator (CG) an emergency data command. This command consists of the message that will be displayed on all TV channels. After transmission of the CG command, the MIP-921<sup>s</sup> sends the SAM codes to activate the home receivers. In addition, an "On" command is sent to the Hub Controller, if used, for blockage of the regular programming signal and distribution of the EAS information to all TV viewers. Relays 1 and 2 are activated providing contact closures for external use. Activation of Relay 1 enables display of the EAS message to all TV channels for two minutes. Relay 2 activation enables display of the EAS message to a specific channel for the time that was programmed in setup.

In addition to the visual display of the EAS message, the MIP-921<sup>s</sup> will transmit the EAS audio message for transmission to all TV sets. This message provides an audible indication of the receipt of a HOT MESSAGE to the TV viewers. Upon completion of audio transmission, the MIP-921<sup>s</sup> sends an "Off" command to the Hub Controller and de-activates Relay 1.

The EAS information (visual and audible) is displayed continuously on the pre-selected channel for an additional five minutes. At the end of the programmed time, the MIP-921<sup>s</sup> terminates transmission by the CG and de-activates Relay 2.

## APPENDIX D

### PROTOCOL 3

#### All Channels Receive EAS Message

##### **General Description**

This appendix describes the protocol when the MIP-921<sup>s</sup> receives a HOT MESSAGE and all TV viewers receive the EAS information for up to two minutes.

**Installation Requirements....**This protocol requires the user to install wiring for Relay 1 on the 9 pin D connector at COMM port 1, and Relay 2 and audio on the rear terminal strip. In addition, a character generator must be connected to COMM port 2 and, if available, the 52.00 MHz modulator to the "Mod Out" rear connector.

**Operational Characteristics....**Upon receipt of the EOM, or time out, of a HOT MESSAGE, the MIP-921<sup>s</sup> will transmit out COMM port 2 to the character generator (CG) an emergency data command. This command consists of the message that will be displayed on all TV channels. After transmission of the CG command, the MIP-921<sup>s</sup> sends the SAM codes to activate the home receivers. In addition, an "On" command is sent to the Hub Controller, if used, for blockage of the regular programming signal and distribution of the EAS information to all TV viewers. Relay 1 is activated providing a contact closure enabling the display of the message to all TV channels for two minutes.

In addition to the visual display of the EAS message, the MIP-921<sup>s</sup> will transmit out the EAS audio message for transmission to all TV sets. This message provides an audible indication of the receipt of a HOT MESSAGE to the TV viewers. Upon completion of audio transmission, the MIP-921<sup>s</sup> sends an "Off" command to the Hub Controller, de-activates Relay 1, and terminates the transmission by the CG.

## APPENDIX E

### PRODUCT SPECIFICATION

#### PROTOCOL

- FCC EAS Codes, ASCII Seven Bit Characters, SAME Compatible

#### INPUTS

- 4 balanced internal or external, 600 ohms, 0.5 Vp-p to 2 Vp-p
- Data channel simplex 2400 Baud ASCII (Serial Port)
- Optional front panel microphone

#### OUTPUTS

- 2 independent control signals activated when a selected message is decoded
- Audio Output 600 ohms balanced on terminal and through port
- Data channel full duplex 1200 Baud, ASCII (Serial Port)
- Override control port (serial port)
- Optional RF out for hub controller option

#### CONTROLS & INDICATORS

- 4 button access for performing set up, printer operation, activation and testing
- Programming via PC (286 or better) - optional
- LCD & LED signalling

### Radio Receivers (two on board – 3<sup>rd</sup> optional)

#### FM RECEIVER

- Digitally tuned from MIP-921<sup>s</sup>
- 75 ohm antenna input
- RF Sensitivity: (s/n=26db) 2 uv
- Frequency range of 88-108 MHz
- THD .8% maximum

#### AM RECEIVER

- Digitally tuned from MIP-921<sup>s</sup> processor
- 75 ohm antenna input
- RF Sensitivity: (s/n=26db) 55 uv
- Frequency range 530-1700 MHz

#### WEATHER RECEIVER

- Digitally tuned from MIP-921<sup>s</sup> processor
- Sensitivity: 1 uV for BER of 10<sup>-5</sup> or 12 dB S/N
- 75 ohm antenna input
- Frequency range includes all (7) NOAA weather frequencies

## **MECHANICAL**

- Operating Temperature 0 to 50 C degrees
- Size 3.50"H x 19"W x 7"D
- Weight Approximately 5 lbs.
- Input power 115 VAC 15 watts
- On-board printer
- On-board uninterruptible power supply
- Output for optional impact printer

## **ELECTRICAL**

- Power (AC) 120 VAC, 60 Hz, 11 watts supplied by AC adapter
- Power (DC)
- Battery operation 10 hours

# **FIPS CODE LISTINGS**

**U.S. State/County  
FIPS Codes  
and  
U.S. Territories  
FIPS Codes**

<b>ALABAMA</b>	<b>001000</b>	Geneva	001061	Tallapoosa	001123
Autauga	001001	Greene	001063	Tuscaloosa	001125
Baldwin	001003	Hale	001065	Walker	001127
Barbour	001005	Henry	001067	Washington	001129
Bibb	001007	Houston	001069	Wilcox	001131
Blount	001009	Jackson	001071	Winston	001133
Bullock	001011	Jefferson	001073		
Butler	001013	Lamar	001075		
Calhoun	001015	Lauderdale	001077	<b>ALASKA</b>	<b>002000</b>
Chambers	001017	Lawrence	001079	Aleutians East	002013
Cherokee	001019	Lee	001081	Aleutians West	002016
Chilton	001021	Limestone	001083	Anchorage	002020
Choctaw	001023	Lowndes	001085	Bethel	002050
Clarke	001025	Macon	001087	Bristol Bay	002060
Clay	001027	Madison	001089	Dillingham	002070
Cleburne	001029	Marengo	001091	Fairbanks North Star	002090
Coffee	001031	Marion	001093	Haines	002100
Colbert	001033	Marshall	001095	Juneau	002110
Conecu	001035	Mobile	001097	Kenai Peninsula	002122
Coosa	001037	Monroe	001099	Ketchikan Gateway	002130
Covington	001039	Montgomery	001101	Kodiak Island	002150
Crenshaw	001041	Morgan	001103	Lake and Peninsula	002164
Cullman	001043	Perry	001105	Matanuska-Susitna	002170
Dale	001045	Pickens	001107	Nome	002180
Dallas	001047	Pike	001109	North Slope	002185
De Kalb	001049	Randolph	001111	Northwest Arctic	002188
Elmore	001051	Russell	001113	Prince of Wales-	
Escambia	001053	St. Clair	001115	Outer Ketchikan	002201
Etowah	001055	Shelby	001117	Sitka	002220
Fayette	001057	Sumter	001119	Skagway-Yakutat-	
Franklin	001059	Talladega	001121	Angoon	002231

<b>ALASKA (con't)</b>		Bradley	005011	Lafayette	005073
Southeast Fairbanks	002240	Calhoun	005013	Lawrence	005075
Valdez-Cordova	002261	Carroll	005015	Lee	005077
Wade Hampton	002270	Chicot	005017	Lincoln	005079
Wrangell-Petersburg	002280	Clark	005019	Little River	005081
Yukon-Koyukuk	002290	Clay	005021	Logan	005083
		Cleburne	005023	Lonoke	005085
<b>ARIZONA</b>	<b>004000</b>	Cleveland	005025	Madison	005087
Apache	004001	Columbia	005027	Marion	005089
Cochise	004003	Conway	005029	Miller	005091
Coconino	004005	Craighead	005031	Mississippi	005093
Gila	004007	Crawford	005033	Monroe	005095
Graham	004009	Crittenden	005035	Montgomery	005097
Greenlee	004011	Cross	005037	Nevada	005099
La Paz	004012	Dallas	005039	Newton	005101
Maricopa	004013	Desha	005041	Ouachita	005103
Mohave	004015	Drew	005043	Perry	005105
Navajo	004017	Faulkner	005045	Phillips	005107
Pima	004019	Franklin	005047	Pike	005109
Pinal	004021	Fulton	005049	Poinsett	005111
Santa Cruz	004023	Garland	005051	Polk	005113
Yavapai	004025	Grant	005053	Pope	005115
Yuma	004027	Greene	005055	Prairie	005117
		Hempstead	005057	Pulaski	005119
		Hot Spring	005059	Randolph	005121
<b>ARKANSAS</b>	<b>005000</b>	Howard	005061	St. Francis	005123
Arkansas	005001	Independence	005063	Saline	005125
Ashley	005003	Izard	005065	Scott	005127
Baxter	005005	Jackson	005067	Searcy	005129
Benton	005007	Jefferson	005069	Sebastian	005131
Boone	005009	Johnson	005071	Sevier	005133

<b>ARKANSAS (cont)</b>		Madera	006039	Sutter	006101
Sharp	005135	Marin	006041	Tehama	006103
Stone	005137	Mariposa	006043	Trinity	006105
Union	005139	Mendocino	006045	Tulare	006107
Van Buren	005141	Merced	006047	Tuolumne	006109
Washington	005143	Modoc	006049	Ventura	006111
White	005145	Mono	006051	Yolo	006113
Woodruff	005147	Monterey	006053	Yuba	006115
Yell	005149	Napa	006055		
		Nevada	006057		
		Orange	006059	<b>COLORADO</b>	<b>008000</b>
<b>CALIFORNIA 006000</b>		Placer	006061	Adams	008001
Alameda	006001	Plumas	006063	Alamosa	008003
Alpine	006003	Riverside	006065	Arapahoe	008005
Amador	006005	Sacramento	006067	Archuleta	008007
Butte	006007	San Benito	006069	Baca	008009
Calaveras	006009	San Bernardino	006071	Bent	008011
Colusa	006011	San Diego	006073	Boulder	008013
Contra Costa	006013	San Francisco	006075	Chaffee	008015
Del Norte	006015	San Joaquin	006077	Cheyenne	008017
El Dorado	006017	San Luis Obispo	006079	Clear Creek	008019
Fresno	006019	San Mateo	006081	Conejos	008021
Glenn	006021	Santa Barbara	006083	Costilla	008023
Humboldt	006023	Santa Clara	006085	Crowley	008025
Imperial	006025	Santa Cruz	006087	Custer	008027
Inyo	006027	Shasta	006089	Delta	008029
Kern	006029	Sierra	006091	Denver	008031
Kings	006031	Siskiyou	006093	Dolores	008033
Lake	006033	Solano	006095	Douglas	008035
Lassen	006035	Sonoma	006097	Eagle	008037
Los Angeles	006037	Stanislaus	006099	Elbert	008039

<b>COLORADO (cont)</b>		Pueblo	008101	New Castle	010003
El Paso	008041	Rio Blanco	008103	Sussex	010005
Fremont	008043	Rio Grande	008105		
Garfield	008045	Routt	008107		
Gilpin	008047	Saguache	008109	<b>FLORIDA</b>	<b>012000</b>
Grand	008049	San Juan	008111	Alachua	012001
Gunnison	008051	San Miguel	008113	Baker	012003
Hinsdale	008053	Sedgwick	008115	Bay	012005
Huerfano	008055	Summit	008117	Bradford	012007
Jackson	008057	Teller	008119	Brevard	012009
Jefferson	008059	Washington	008121	Broward	012011
Kiowa	008061	Weld	008123	Calhoun	012013
Kit Carson	008063	Yuma	008125	Charlotte	012015
Lake	008065			Citrus	012017
La Plata	008067			Clay	012019
Larimer	008069	<b>CONNECTICUT</b>	<b>009000</b>	Collier	012021
Las Animas	008071	Fairfield	009001	Columbia	012023
Lincoln	008073	Hartford	009003	Dade	012025
Logan	008075	Litchfield	009005	De Soto	012027
Mesa	008077	Middlesex	009007	Dixie	012029
Mineral	008079	New Haven	009009	Duval	012031
Moffat	008081	New London	009011	Escambia	012033
Montezuma	008083	Tolland	009013	Flagler	012035
Montrose	008085	Windham	009015	Franklin	012037
Morgan	008087			Gadsden	012039
Otero	008089	<b>DISTRICT OF</b>		Gilchrist	012041
Ouray	008091	<b>COLUMBIA</b>	<b>011000</b>	Glades	012043
Park	008093	District of Columbia	011001	Gulf	012045
Phillips	008095			Hamilton	012047
Pitkin	008097	<b>DELAWARE</b>	<b>010000</b>	Hardee	012049
Prowers	008099	Kent	010001		

<b>FLORIDA (cont)</b>		St. Lucie	012111	Burke	013033
Hendry	012051	Santa Rosa	012113	Butts	013035
Hernando	012053	Sarasota	012115	Calhoun	013037
Highlands	012055	Seminole	012117	Camden	013039
Hillsborough	012057	Sumter	012119	Candler	013043
Holmes	012059	Suwannee	012121	Carroll	013045
Indian River	012061	Taylor	012123	Catoosa	013047
Jackson	012063	Union	012125	Charlton	013049
Jefferson	012065	Volusia	012127	Chatham	013051
Lafayette	012067	Wakulla	012129	Chattahoochee	013053
Lake	012069	Walton	012131	Chattooga	013055
Lee	012071	Washington	012133	Cherokee	013057
Leon	012073			Clarke	013059
Levy	012075			Clay	013061
Liberty	012077	<b>GEORGIA</b>	<b>013000</b>	Clayton	013063
Madison	012079	Appling	013001	Clinch	013065
Manatee	012081	Atkinson	013003	Cobb	013067
Marion	012083	Bacon	013005	Coffee	013069
Martin	012085	Baker	013007	Colquitt	013071
Monroe	012087	Baldwin	013009	Columbia	013073
Nassau	012089	Banks	013011	Cook	013075
Okaloosa	012091	Barrow	013013	Coweta	013077
Okeechobee	012093	Bartow	013015	Crawford	013079
Orange	012095	Ben Hill	013017	Crisp	013081
Osceola	012097	Berrien	013019	Dade	013083
Palm Beach	012099	Bibb	013021	Dawson	013085
Pasco	012101	Bleckley	013023	Decatur	013087
Pinellas	012103	Brantley	013025	De Kalb	013089
Polk	012105	Brooks	013027	Dodge	013091
Putnam	012107	Bryan	013029	Dooly	013093
St. Johns	012109	Bulloch	013031	Dougherty	013095

<b>GEORGIA (cont)</b>		Jackson	013157	Oglethorpe	013221
Douglas	013097	Jasper	013159	Paulding	013223
Early	013099	Jeff Davis	013161	Peach	013225
Echols	013101	Jefferson	013163	Pickens	013227
Effingham	013103	Jenkins	013165	Pierce	013229
Elbert	013105	Johnson	013167	Pike	013231
Emanuel	013107	Jones	013169	Polk	013233
Evans	013109	Lamar	013171	Pulaski	013235
Fannin	013111	Lanier	013173	Putnam	013237
Fayette	013113	Laurens	013175	Quitman	013239
Floyd	013115	Lee	013177	Rabun	013241
Forsyth	013117	Liberty	013179	Randolph	013243
Franklin	013119	Lincoln	013181	Richmond	013245
Fulton	013121	Long	013183	Rockdale	013247
Gilmer	013123	Lowndes	013185	Schley	013249
Glascock	013125	Lumpkin	013187	Screven	013251
Glynn	013127	McDuffie	013189	Seminole	013253
Gordon	013129	McIntosh	013191	Spalding	013255
Grady	013131	Macon	013193	Stephens	013257
Greene	013133	Madison	013195	Stewart	013259
Gwinnett	013135	Marion	013197	Sumter	013261
Habersham	013137	Meriwether	013199	Talbot	013263
Hall	013139	Miller	013201	Taliaferro	013265
Hancock	013141	Mitchell	013205	Tattnall	013267
Haralson	013143	Monroe	013207	Taylor	013269
Harris	013145	Montgomery	013209	Telfair	013271
Hart	013147	Morgan	013211	Terrell	013273
Heard	013149	Murray	013213	Thomas	013275
Henry	013151	Muscogee	013215	Tift	013277
Houston	013153	Newton	013217	Toombs	013279
Irwin	013155	Oconee	013219	Towns	013281

<b>GEORGIA (cont)</b>		<b>IOWA</b>	<b>019000</b>	Dubuque	019061
Treutlen	013283	Adair	019001	Emmet	019063
Troup	013285	Adams	019003	Fayette	019065
Turner	013287	Allamakee	019005	Floyd	019067
Twiggs	013289	Appanoose	019007	Franklin	019069
Union	013291	Audubon	019009	Fremont	019071
Upson	013293	Benton	019011	Greene	019073
Walker	013295	Black Hawk	019013	Grundy	019075
Walton	013297	Boone	019015	Guthrie	019077
Ware	013299	Bremer	019017	Hamilton	019079
Warren	013301	Buchanan	019019	Hancock	019081"
Washington	013303	Buena Vista	019021	Hardin	019083
Wayne	013305	Butler	019023	Harrison	019085
Webster	013307	Calhoun	019025	Henry	019087
Wheeler	013309	Carroll	019027	Howard	019089
White	013311	Cass	019029	Humboldt	019091
Whitfield	013313	Cedar	019031	Ida	019093
Wilcox	013315	Cerro Gordo	019033	Iowa	019095
Wilkes	013317	Cherokee	019035	Jackson	019097
Wilkinson	013319	Chickasaw	019037	Jasper	019099
Worth	013321	Clarke	019039	Jefferson	019101
		Clay	019041	Johnson	019103
		Clayton	019043	Jones	019105
<b>HAWAII 015000</b>		Clinton	019045	Keokuk	019107
Hawaii	015001	Crawford	019047	Kossuth	019109
Honolulu	015003	Dallas	019049	Lee	019111
Kalawao	015005	Davis	019051	Linn	019113
Kauai	015007	Decatur	019053	Louisa	019115
Maui	015009	Delaware	019055	Lucas	019117
		Des Moines	019057	Lyon	019119
		Dickinson	019059	Madison	019121

<b>IOWA (cont)</b>		Washington	019183	Franklin	016041
Mahaska	019123	Wayne	019185	Fremont	016043
Marion	019125	Webster	019187	Gem	016045
Marshall	019127	Winnebago	019189	Gooding	016047
Mills	019129	Winneshiek	019191	Idaho	016049
Mitchell	019131	Woodbury	019193	Jefferson	016051
Monona	019133	Worth	019195	Jerome	016053
Monroe	019135	Wright	019197	Kootenai	016055
Montgomery	019137			Latah	016057
Muscatine	019139			Lemhi	016059
O'Brien	019141	<b>IDAHO</b>	<b>016000</b>	Lewis	016061
Osceola	019143	Ada	016001	Lincoln	016063
Page	019145	Adams	016003	"Madison	016065
Palo Alto	019147	Bannock	016005	Minidoka	016067
Plymouth	019149	Bear Lake	016007	Nez Perce	016069
Pocahontas	019151	Benewah	016009	Oneida	016071
Polk	019153	Bingham	016011	Owyhee	016073
Pottawattamie	019155	Blaine	016013	Payette	016075
Poweshiek	019157	Boise	016015	Power	016077
Ringgold	019159	Bonner	016017	Shoshone	016079
Sac	019161	Bonneville	016019	Teton	016081
Scott	019163	Boundary	016021	Twin Falls	016083
Shelby	019165	Butte	016023	Valley	016085
Sioux	019167	Camas	016025	Washington	016087
Story	019169	Canyon	016027		
Tama	019171	Caribou	016029		
Taylor	019173	Cassia	016031	<b>ILLINOIS</b>	<b>017000</b>
Union	019175	Clark	016033	Adams	017001
Van Buren	019177	Clearwater	016035	Alexander	017003
Wapello	019179	Custer	016037	Bond	017005
Warren	019181	Elmore	016039	Boone	017007

<b>ILLINOIS (cont)</b>		<b>Hardin</b>	017069	<b>Mercer</b>	017131
Brown	017009	Henderson	017071	Monroe	017133
Bureau	017011	Henry	017073	Montgomery	017135
Calhoun	017013	Iroquois	017075	Morgan	017137
Carroll	017015	Jackson	017077	Moultrie	017139
Cass	017017	Jasper	017079	Ogle	017141
Champaign	017019	Jefferson	017081	Peoria	017143
Christian	017021	Jersey	017083	Perry	017145
Clark	017023	Jo Daviess	017085	Piatt	017147
Clay	017025	Johnson	017087	Pike	017149
Clinton	017027	Kane	017089	Pope	017151
Coles	017029	Kankakee	017091	Pulaski	017153
Cook	017031	Kendall	017093	Putnam	017155
Crawford	017033	Knox	017095	Randolph	017157
Cumberland	017035	Lake	017097	Richland	017159
DeKalb	017037	La Salle	017099	Rock Island	017161
De Witt	017039	Lawrence	017101	St. Clair	017163
Douglas	017041	Lee	017103	Saline	017165
DuPage	017043	Livingston	017105	Sangamon	017167
Edgar	017045	Logan	017107	Schuyler	017169
Edwards	017047	McDonough	017109	Scott	017171
Effingham	017049	McHenry	017111	Shelby	017173
Fayette	017051	McLean	017113	Stark	017175
Ford	017053	Macon	017115	Stephenson	017177
Franklin	017055	Macoupin	017117	Tazewell	017179
Fulton	017057	Madison	017119	Union	017181
Gallatin	017059	Marion	017121	Vermilion	017183
Greene	017061	Marshall	017123	Wabash	017185
Grundy	017063	Mason	017125	Warren	017187
Hamilton	017065	Massac	017127	Washington	017189
Hancock	017067	Menard	017129	Wayne	017191

<b>ILLINOIS (cont)</b>		Floyd	018043	Monroe	018105
White	017193	Fountain	018045	Montgomery	018107
Whiteside	017195	Franklin	018047	Morgan	018109
Will	017197	Fulton	018049	Newton	018111
Williamson	017199	Gibson	018051	Noble	018113
Winnebago	017201	Grant	018053	Ohio	018115
Woodford	017203	Greene	018055	Orange	018117
		Hamilton	018057	Owen	018119
		Hancock	018059	Parke	018121
<b>INDIANA</b>	<b>018000</b>	Harrison	018061	Perry	018123
Adams	018001	Hendricks	018063	Pike	018125
Allen	018003	Henry	018065	Porter	018127
Bartholomew	018005	Howard	018067	Posey	018129
Benton	018007	Huntington	018069	Pulaski	018131
Blackford	018009	Jackson	018071	Putnam	018133
Boone	018011	Jasper	018073	Randolph	018135
Brown	018013	Jay	018075	Ripley	018137
Carroll	018015	Jefferson	018077	Rush	018139
Cass	018017	Jennings	018079	St. Joseph	018141
Clark	018019	Johnson	018081	Scott	018143
Clay	018021	Knox	018083	Shelby	018145
Clinton	018023	Kosciusko	018085	Spencer	018147
Crawford	018025	Lagrange	018087	Starke	018149
Daviess	018027	Lake	018089	Steuben	018151
Dearborn	018029	La Porte	018091	Sullivan	018153
Decatur	018031	Lawrence	018093	Switzerland	018155
De Kalb	018033	Madison	018095	Tippecanoe	018157
Delaware	018035	Marion	018097	Tipton	018159
Dubois	018037	Marshall	018099	Union	018161
Elkhart	018039	Martin	018101	Vanderburgh	018163
Fayette	018041	Miami	018103	Vermillion	018165

<b>INDIANA (cont)</b>		Crawford	020037	Labette	020099
Vigo	018167	Decatur	020039	Lane	020101
Wabash	018169	Dickinson	020041	Leavenworth	020103
Warren	018171	Doniphan	020043	Lincoln	020105
Warrick	018173	Douglas	020045	Linn	020107
Washington	018175	Edwards	020047	Logan	020109
Wayne	018177	Elk	020049	Lyon	020111
Wells	018179	Ellis	020051	McPherson	020113
White	018181	Ellsworth	020053	Marion	020115
Whitley	018183	Finney	020055	Marshall	020117
		Ford	020057	Meade	020119
		Franklin	020059	Miami	020121
<b>KANSAS</b>	<b>020000</b>	Geary	020061	Mitchell	020123
Allen	020001	Gove	020063	Montgomery	020125
Anderson	020003	Graham	020065	Morris	020127
Atchison	020005	Grant	020067	Morton	020129
Barber	020007	Gray	020069	Nemaha	020131
Barton	020009	Greeley	020071	Neosho	020133
Bourbon	020011	Greenwood	020073	Ness	020135
Brown	020013	Hamilton	020075	Norton	020137
Butler	020015	Harper	020077	Osage	020139
Chase	020017	Harvey	020079	Osborne	020141
Chautauqua	020019	Haskell	020081	Ottawa	020143
Cherokee	020021	Hodgeman	020083	Pawnee	020145
Cheyenne	020023	Jackson	020085	Phillips	020147
Clark	020025	Jefferson	020087	Pottawatomie	020149
Clay	020027	Jewell	020089	Pratt	020151
Cloud	020029	Johnson	020091	Rawlins	020153
Coffey	020031	Kearny	020093	Reno	020155
Comanche	020033	Kingman	020095	Republic	020157
Cowley	020035	Kiowa	020097	Rice	020159

<b>KANSAS (cont)</b>		Anderson	021005	Fayette	021067
Riley	020161	Ballard	021007	Fleming	021069
Rooks	020163	Barren	021009	Floyd	021071
Rush	020165	Bath	021011	Franklin	021073
Russell	020167	Bell	021013	Fulton	021075
Saline	020169	Boone	021015	Gallatin	021077
Scott	020171	Bourbon	021017	Garrard	021079
Sedgwick	020173	Boyd	021019	Grant	021081
Seward	020175	Boyle	021021	Graves	021083
Shawnee	020177	Bracken	021023	Grayson	021085
Sheridan	020179	Breathitt	021025	Green	021087
Sherman	020181	Breckinridge	021027	Greenup	021089
Smith	020183	Bullitt	021029	Hancock	021091
Stafford	020185	Butler	021031	Hardin	021093
Stanton	020187	Caldwell	021033	Harlan	021095
Stevens	020189	Calloway	021035	Harrison	021097
Sumner	020191	Campbell	021037	Hart	021099
Thomas	020193	Carlisle	021039	Henderson	021101
Trego	020195	Carroll	021041	Henry	021103
Wabaunsee	020197	Carter	021043	Hickman	021105
Wallace	020199	Casey	021045	Hopkins	021107
Washington	020201	Christian	021047	Jackson	021109
Wichita	020203	Clark	021049	Jefferson	021111
Wilson	020205	Clay	021051	Jessamine	021113
Woodson	020207	Clinton	021053	Johnson	021115
Wyandotte	020209	Crittenden	021055	Kenton	021117
		Cumberland	021057	Knott	021119
		Daviess	021059	Knox	021121
<b>KENTUCKY</b>	<b>021000</b>	Edmonson	021061	Larue	021123
Adair	021001	Elliott	021063	Laurel	021125
Allen	021003	Estill	021065	Lawrence	021127

<b>KENTUCKY (cont)</b>		Owsley	021189	Ascension	022005
Lee	021129	Pendleton	021191	Assumption	022007
Leslie	021131	Perry	021193	Avoyelles	022009
Letcher	021133	Pike	021195	Beauregard	022011
Lewis	021135	Powell	021197	Bienville	022013
Lincoln	021137	Pulaski	021199	Bossier	022015
Livingston	021139	Robertson	021201	Caddo	022017
Logan	021141	Rockcastle	021203	Calcasieu	022019
Lyon	021143	Rowan	021205	Caldwell	022021
McCracken	021145	Russell	021207	Cameron	022023
McCreary	021147	Scott	021209	Catahoula	022025
McLean	021149	Shelby	021211	Claiborne	022027
Madison	021151	Simpson	021213	Concordia	022029
Magoffin	021153	Spencer	021215	De Soto	022031
Marion	021155	Taylor	021217	East Baton Rouge	022033
Marshall	021157	Todd	021219	East Carroll	022035
Martin	021159	Trigg	021221	East Feliciana	022037
Mason	021161	Trimble	021223	Evangeline	022039
Meade	021163	Union	021225	Franklin	022041
Menifee	021165	Warren	021227	Grant	022043
Mercer	021167	Washington	021229	Iberia	022045
Metcalfe	021169	Wayne	021231	Iberville	022047
Monroe	021171	Webster	021233	Jackson	022049
Montgomery	021173	Whitley	021235	Jefferson	022051
Morgan	021175	Wolfe	021237	Jefferson Davis	022053
Muhlenberg	021177	Woodford	021239	Lafayette	022055
Nelson	021179			Lafourche	022057
Nicholas	021181			La Salle	022059
Ohio	021183	<b>LOUISIANA</b>	<b>022000</b>	Lincoln	022061
Oldham	021185	Acadia	022001	Livingston	022063
Owen	021187	Allen	022003	Madison	022065

<b>LOUISIANA (cont)</b>		Winn	022127	Garrett	024023
Morehouse	022067			Harford	024025
Natchitoches	022069			Howard	024027
Orleans	022071	<b>MASSACHUSETTS 025000</b>		Kent	024029
Ouachita	022073	Barnstable	025001	Montgomery	024031
Plaquemines	022075	Berkshire	025003	Prince George's	024033
Pointe Coupee	022077	Bristol	025005	Queen Anne's	024035
Rapides	022079	Dukes	025007	St. Mary's	024037
Red River	022081	Essex	025009	Somerset	024039
Richland	022083	Franklin	025011	Talbot	024041
Sabine	022085	Hampden	025013	Washington	024043
St. Bernard	022087	Hampshire	025015	Wicomico	024045
St. Charles	022089	Middlesex	025017	Worcester	024047
St. Helena	022091	Nantucket	025019	Baltimore city	024510
St. James	022093	Norfolk	025021		—
St. John the Baptist	022095	Plymouth	025023		—
St. Landry	022097	Suffolk	025025	<b>MAINE</b>	<b>023000</b>
St. Martin	022099	Worcester	025027	Androscoggin	023001
St. Mary	022101			Aroostook	023003
St. Tammany	022103			Cumberland	023005
Tangipahoa	022105	<b>MARYLAND</b>	<b>024000</b>	Franklin	023007
Tensas	022107	Allegany	024001	Hancock	023009
Terrebonne	022109	Anne Arundel	024003	Kennebec	023011
Union	022111	Baltimore	024005	Knox	023013
Vermilion	022113	Calvert	024009	Lincoln	023015
Vernon	022115	Caroline	024011	Oxford	023017
Washington	022117	Carroll	024013	Penobscot	023019
Webster	022119	Cecil	024015	Piscataquis	023021
West Baton Rouge	022121	Charles	024017	Sagadahoc	023023
West Carroll	022123	Dorchester	024019	Somerset	023025
West Feliciana	022125	Frederick	024021	Waldo	023027

<b>MAINE (cont)</b>		Gladwin	026051	Missaukee	026113
Washington	023029	Gogebic	026053	Monroe	026115
York	023031	Grand Traverse	026055	Montcalm	026117
		Gratiot	026057	Montmorency	026119
		Hillsdale	026059	Muskegon	026121
<b>MICHIGAN</b>	<b>026000</b>	Houghton	026061	Newaygo	026123
Alcona	026001	Huron	026063	Oakland	026125
Alger	026003	Ingham	026065	Oceana	026127
Allegan	026005	Ionia	026067	Ogemaw	026129
Alpena	026007	Iosco	026069	Ontonagon	026131
Antrim	026009	Iron	026071	Osceola	026133
Arenac	026011	Isabella	026073	Oscoda	026135
Baraga	026013	Jackson	026075	Otsego	026137
Barry	026015	Kalamazoo	026077	Ottawa	026139
Bay	026017	Kalkaska	026079	Presque Isle	026141
Benzie	026019	Kent	026081	Roscommon	026143
Berrien	026021	Keweenaw	026083	Saginaw	026145
Branch	026023	Lake	026085	St. Clair	026147
Calhoun	026025	Lapeer	026087	St. Joseph	026149
Cass	026027	Leelanau	026089	Sanilac	026151
Charlevoix	026029	Lenawee	026091	Schoolcraft	026153
Cheboygan	026031	Livingston	026093	Shiawassee	026155
Chippewa	026033	Luce	026095	Tuscola	026157
Clare	026035	Mackinac	026097	Van Buren	026159
Clinton	026037	Macomb	026099	Washtenaw	026161
Crawford	026039	Manistee	026101	Wayne	026163
Delta	026041	Marquette	026103	Wexford	026165
Dickinson	026043	Mason	026105		
Eaton	026045	Mecosta	026107		
Emmet	026047	Menominee	026109		
Genesee	026049	Midland	026111		

<b>MINNESOTA</b>	<b>027000</b>	Itasca	027061	Ramsey	027123
Aitkin	027001	Jackson	027063	Red Lake	027125
Anoka	027003	Kanabec	027065	Redwood	027127
Becker	027005	Kandiyohi	027067	Renville	027129
Beltrami	027007	Kittson	027069	Rice	027131
Benton	027009	Koochiching	027071	Rock	027133
Big Stone	027011	Lac qui Parle	027073	Roseau	027135
Blue Earth	027013	Lake	027075	St. Louis	027137
Brown	027015	Lake of the Woods	027077	Scott	027139
Carlton	027017	Le Sueur	027079	Sherburne	027141
Carver	027019	Lincoln	027081	Sibley	027143
Cass	027021	Lyon	027083	Stearns	027145
Chippewa	027023	McLeod	027085	Steele	027147
Chisago	027025	Mahnomen	027087	Stevens	027149
Clay	027027	Marshall	027089	Swift	027151
Clearwater	027029	Martin	027091	Todd	027153
Cook	027031	Meeker	027093	Traverse	027155
Cottonwood	027033	Mille Lacs	027095	Wabasha	027157
Crow Wing	027035	Morrison	027097	Wadena	027159
Dakota	027037	Mower	027099	Waseca	027161
Dodge	027039	Murray	027101	Washington	027163
Douglas	027041	Nicollet	027103	Watonwan	027165
Faribault	027043	Nobles	027105	Wilkin	027167
Fillmore	027045	Norman	027107	Winona	027169
Freeborn	027047	Olmsted	027109	Wright	027171
Goodhue	027049	Otter Tail	027111	Yellow Medicine	027173
Grant	027051	Pennington	027113		
Hennepin	027053	Pine	027115		
Houston	027055	Pipestone	027117	<b>MISSOURI</b>	<b>029000</b>
Hubbard	027057	Polk	027119	Adair	029001
Isanti	027059	Pope	027121	Andrew	029003

<b>MISSOURI (cont)</b>		Dent	029065	Marion	029127
Atchison	029005	Douglas	029067	Mercer	029129
Audrain	029007	Dunklin	029069	Miller	029131
Barry	029009	Franklin	029071	Mississippi	029133
Barton	029011	Gasconade	029073	Moniteau	029135
Bates	029013	Gentry	029075	Monroe	029137
Benton	029015	Greene	029077	Montgomery	029139
Bollinger	029017	Grundy	029079	Morgan	029141
Boone	029019	Harrison	029081	New Madrid	029143
Buchanan	029021	Henry	029083	Newton	029145
Butler	029023	Hickory	029085	Nodaway	029147
Caldwell	029025	Holt	029087	Oregon	029149
Callaway	029027	Howard	029089	Osage	029151
Camden	029029	Howell	029091	Ozark	029153
Cape Girardeau	029031	Iron	029093	Pemiscot	029155
Carroll	029033	Jackson	029095	Perry	029157
Carter	029035	Jasper	029097	Pettis	029159
Cass	029037	Jefferson	029099	Phelps	029161
Cedar	029039	Johnson	029101	Pike	029163
Chariton	029041	Knox	029103	Platte	029165
Christian	029043	Laclede	029105	Polk	029167
Clark	029045	Lafayette	029107	Pulaski	029169
Clay	029047	Lawrence	029109	Putnam	029171
Clinton	029049	Lewis	029111	Ralls	029173
Cole	029051	Lincoln	029113	Randolph	029175
Cooper	029053	Linn	029115	Ray	029177
Crawford	029055	Livingston	029117	Reynolds	029179
Dade	029057	McDonald	029119	Ripley	029181
Dallas	029059	Macon	029121	St. Charles	029183
Daviess	029061	Madison	029123	St. Clair	029185
De Kalb	029063	Maries	029125	Ste. Genevieve	029186

<b>MISSOURI (cont)</b>		Calhoun	028013	Lauderdale	028075
St. Francois	029187	Carroll	028015	Lawrence	028077
St. Louis	029189	Chickasaw	028017	Leake	028079
Saline	029195	Choctaw	028019	Lee	028081
Schuyler	029197	Claiborne	028021	Leflore	028083
Scotland	029199	Clarke	028023	Lincoln	028085
Scott	029201	Clay	028025	Lowndes	028087
Shannon	029203	Coahoma	028027	Madison	028089
Shelby	029205	Copiah	028029	Marion	028091
Stoddard	029207	Covington	028031	Marshal	028093
Stone	029209	DeSoto	028033	Monroe	028095
Sullivan	029211	Forrest	028035	Montgomery	028097
Taney	029213	Franklin	028037	Neshoba	028099
Texas	029215	George	028039	Newton	028101
Vernon	029217	Greene	028041	Noxubee	028103
Warren	029219	Grenada	028043	Oktibbeha	028105
Washington	029221	Hancock	028045	Panola	028107
Wayne	029223	Harrison	028047	Pearl River	028109
Webster	029225	Hinds	028049	Perry	028111
Worth	029227	Holmes	028051	Pike	028113
Wright	029229	Humphreys	028053	Pontotoc	028115
St. Louis City	029510	Issaquena	028055	Prentiss	028117
		Itawamba	028057	Quitman	028119
		Jackson	028059	Rankin	028121
<b>MISSISSIPPI</b>	<b>028000</b>	Jasper	028061	Scott	028123
Adams	028001	Jefferson	028063	Sharkey	028125
Alcorn	028003	Jefferson Davis	028065	Simpson	028127
Amite	028005	Jones	028067	Smith	028129
Attala	028007	Kemper	028069	Stone	028131
Benton	028009	Lafayette	028071	Sunflower	028133
Bolivar	028011	Lamar	028073	Tallahatchie	028135

<b>MISSISSIPPI (cont)</b>		Fergus	030027	Sanders	030089
Tate	028137	Flathead	030029	Sheridan	030091
Tippah	028139	Gallatin	030031	Silver Bow	030093
Tishomingo	028141	Garfield	030033	Stillwater	030095
Tunica	028143	Glacier	030035	Sweet Grass	030097
Union	028145	Golden Valley	030037	Teton	030099
Walthall	028147	Granite	030039	Toole	030101
Warren	028149	Hill	030041	Treasure	030103
Washington	028151	Jefferson	030043	Valley	030105
Wayne	028153	Judith Basin	030045	Wheatland	030107
Webster	028155	Lake	030047	Wibaux	030109
Wilkinson	028157	Lewis and Clark	030049	Yellowstone	030111
Winston	028159	Liberty	030051	Yellowstone	
Yalobusha	028161	Lincoln	030053	National Park	030113
Yazoo	028163	McCone	030055		
		Madison	030057		
		Meagher	030059	<b>NORTH CAROLINA 037000</b>	
<b>MONTANA</b>	<b>030000</b>	Mineral	030061	Alamance	037001
Beaverhead	030001	Missoula	030063	Alexander	037003
Big Horn	030003	Musselshell	030065	Alleghany	037005
Blaine	030005	Park	030067	Anson	037007
Broadwater	030007	Petroleum	030069	Ashe	037009
Carbon	030009	Phillips	030071	Avery	037011
Carter	030011	Pondera	030073	Beaufort	037013
Cascade	030013	Powder River	030075	Bertie	037015
Chouteau	030015	Powell	030077	Bladen	037017
Custer	030017	Prairie	030079	Brunswick	037019
Daniels	030019	Ravalli	030081	Buncombe	037021
Dawson	030021	Richland	030083	Burke	037023
Deer Lodge	030023	Roosevelt	030085	Cabarrus	037025
Fallon	030025	Rosebud	030087	Caldwell	037027

<b>NORTH CAROLINA (cont)</b>		Henderson	037089	Randolph	037151
Camden	037029	Hertford	037091	Richmond	037153
Carteret	037031	Hoke	037093	Robeson	037155
Caswell	037033	Hyde	037095	Rockingham	037157
Catawba	037035	Iredell	037097	Rowan	037159
Chatham	037037	Jackson	037099	Rutherford	037161
Cherokee	037039	Johnston	037101	Sampson	037163
Chowan	037041	Jones	037103	Scotland	037165
Clay	037043	Lee	037105	Stanly	037167
Cleveland	037045	Lenoir	037107	Stokes	037169
Columbus	037047	Lincoln	037109	Surry	037171
Craven	037049	McDowell	037111	Swain	037173
Cumberland	037051	Macon	037113	Transylvania	037175
Currituck	037053	Madison	037115	Tyrrell	037177
Dare	037055	Martin	037117	Union	037179
Davidson	037057	Mecklenburg	037119	Vance	037181
Davie	037059	Mitchell	037121	Wake	037183
Duplin	037061	Montgomery	037123	Warren	037185
Durham	037063	Moore	037125	Washington	037187
Edgecombe	037065	Nash	037127	Watauga	037189
Forsyth	037067	New Hanover	037129	Wayne	037191
Franklin	037069	Northampton	037131	Wilkes	037193
Gaston	037071	Onslow	037133	Wilson	037195
Gates	037073	Orange	037135	Yadkin	037197
Graham	037075	Pamlico	037137	Yancey	037199
Granville	037077	Pasquotank	037139		
Greene	037079	Pender	037141		
Guilford	037081	Perquimans	037143	<b>NORTH DAKOTA</b>	<b>038000</b>
Halifax	037083	Person	037145	Adams	038001
Harnett	037085	Pitt	037147	Barnes	038003
Haywood	037087	Polk	037149	Benson	038005

<b>NORTH DAKOTA (cont)</b>		Pembina	038067	Buffalo	031019
Billings	038007	Pierce	038069	Burt	031021
Bottineau	038009	Ramsey	038071	Butler	031023
Bowman	038011	Ransom	038073	Cass	031025
Burke	038013	Renville	038075	Cedar	031027
Burleigh	038015	Richland	038077	Chase	031029
Cass	038017	Rolette	038079	Cherry	031031
Cavalier	038019	Sheridan	038083	Cheyenne	031033
Dickey	038021	Sioux	038085	Clay	031035
Divide	038023	Slope	038087	Colfax	031037
Dunn	038025	Stark	038089	Cuming	031039
Eddy	038027	Steele	038091	Custer	031041
Emmons	038029	Stutsman	038093	Dakota	031043
Foster	038031	Towner	038095	Dawes	031045
Golden Valley	038033	Trail	038097	Dawson	031047
Grand Forks	038035	Walsh	038099	Deuel	031049
Grant	038037	Ward	038101	Dixon	031051
Griggs	038039	Wells	038103	Dodge	031053
Hettinger	038041	Williams	038105	Douglas	031055
Kidder	038043			Dundy	031057
La Moure	038045			Fillmore	031059
Logan	038047	<b>NEBRASKA</b>	<b>031000</b>	Franklin	031061
McHenry	038049	Adams	031001	Frontier	031063
McIntosh	038051	Antelope	031003	Furnas	031065
McKenzie	038053	Arthur	031005	Gage	031067
McLean	038055	Banner	031007	Garden	031069
Mercer	038057	Blaine	031009	Garfield	031071
Morton	038059	Boone	031011	Gosper	031073
Mountrail	038061	Box Butte	031013	Grant	031075
Nelson	038063	Boyd	031015	Greeley	031077
Oliver	038065	Brown	031017	Hall	031079

<b>NEBRASKA (cont)</b>		Platte	031141	Hillsborough	033011
Hamilton	031081	Polk	031143	Merrimack	033013
Harlan	031083	Red Willow	031145	Rockingham	033015
Hayes	031085	Richardson	031147	Strafford	033017
Hitchcock	031087	Rock	031149	Sullivan	033019
Holt	031089	Saline	031151		
Hooker	031091	Sarpy	031153		
Howard	031093	Saunders	031155	<b>NEW JERSEY</b>	<b>034000</b>
Jefferson	031095	Scotts Bluff	031157	Atlantic	034001
Johnson	031097	Seward	031159	Bergen	034003
Kearney	031099	Sheridan	031161	Burlington	034005
Keith	031101	Sherman	031163	Camden	034007
Keya Paha	031103	Sioux	031165	Cape May	034009
Kimball	031105	Stanton	031167	Cumberland	034011
Knox	031107	Thayer	031169	Essex	034013
Lancaster	031109	Thomas	031171	Gloucester	034015
Lincoln	031111	Thurston	031173	Hudson	034017
Logan	031113	Valley	031175	Hunterdon	034019
Loup	031115	Washington	031177	Mercer	034021
McPherson	031117	Wayne	031179	Middlesex	034023
Madison	031119	Webster	031181	Monmouth	034025
Merrick	031121	Wheeler	031183	Morris	034027
Morrill	031123	York	031185	Ocean	034029
Nance	031125			Passaic	034031
Nemaha	031127			Salem	034033
Nuckolls	031129	<b>NEW HAMPSHIRE 033000</b>		Somerset	034035
Otoe	031131	Belknap	033001	Sussex	034037
Pawnee	031133	Carroll	033003	Union	034039
Perkins	031135	Cheshire	033005	Warren	034041
Phelps	031137	Coos	033007		
Pierce	031139	Grafton	033009		

<b>NEW MEXICO</b>	<b>035000</b>	Torrance	035057	Cayuga	036011
Bernalillo	035001	Union	035059	Chautauqua	036013
Catron	035003	Valencia	035061	Chemung	036015
Chaves	035005			Chenango	036017
Cibola	035006			Clinton	036019
Colfax	035007	<b>NEVADA</b>	<b>032000</b>	Columbia	036021
Curry	035009	Churchill	032001	Cortland	036023
De Baca	035011	Clark	032003	Delaware	036025
Dona Ana	035013	Douglas	032005	Dutchess	036027
Eddy	035015	Elko	032007	Erie	036029
Grant	035017	Esmeralda	032009	Essex	036031
Guadalupe	035019	Eureka	032011	Franklin	036033
Harding	035021	Humboldt	032013	Fulton	036035
Hidalgo	035023	Lander	032015	Genesee	036037
Lea	035025	Lincoln	032017	Greene	036039
Lincoln	035027	Lyon	032019	Hamilton	036041
Los Alamos	035028	Mineral	032021	Herkimer	036043
Luna	035029	Nye	032023	Jefferson	036045
McKinley	035031	Pershing	032027	Kings	036047
Mora	035033	Storey	032029	Lewis	036049
Otero	035035	Washoe	032031	Livingston	036051
Quay	035037	White Pine	032033	Madison	036053
Rio Arriba	035039	Carson City	032510	Monroe	036055
Roosevelt	035041			Montgomery	036057
Sandoval	035043			Nassau	036059
San Juan	035045	<b>NEW YORK</b>	<b>036000</b>	New York	036061
San Miguel	035047	Albany	036001	Niagara	036063
Santa Fe	035049	Allegany	036003	Oneida	036065
Sierra	035051	Bronx	036005	Onondaga	036067
Socorro	035053	Broome	036007	Ontario	036069
Taos	035055	Cattaraugus	036009	Orange	036071

<b>NEW YORK (cont)</b>		<b>Allen</b>	039003	<b>Hardin</b>	039065
Orleans	036073	<b>Ashland</b>	039005	<b>Harrison</b>	039067
Oswego	036075	<b>Ashtabula</b>	039007	<b>Henry</b>	039069
Otsego	036077	<b>Athens</b>	039009	<b>Highland</b>	039071
Putnam	036079	<b>Auglaize</b>	039011	<b>Hocking</b>	039073
Queens	036081	<b>Belmont</b>	039013	<b>Holmes</b>	039075
Rensselaer	036083	<b>Brown</b>	039015	<b>Huron</b>	039077
Richmond	036085	<b>Butler</b>	039017	<b>Jackson</b>	039079
Rockland	036087	<b>Carroll</b>	039019	<b>Jefferson</b>	039081
St. Lawrence	036089	<b>Champaign</b>	039021	<b>Knox</b>	039083
Saratoga	036091	<b>Clark</b>	039023	<b>Lake</b>	039085
Schenectady	036093	<b>Clermont</b>	039025	<b>Lawrence</b>	039087
Schoharie	036095	<b>Clinton</b>	039027	<b>Licking</b>	039089
Schuyler	036097	<b>Columbiana</b>	039029	<b>Logan</b>	039091
Seneca	036099	<b>Coshocton</b>	039031	<b>Lorain</b>	039093
Steuben	036101	<b>Crawford</b>	039033	<b>Lucas</b>	039095
Suffolk	036103	<b>Cuyahoga</b>	039035	<b>Madison</b>	039097
Sullivan	036105	<b>Darke</b>	039037	<b>Mahoning</b>	039099
Tioga	036107	<b>Defiance</b>	039039	<b>Marion</b>	039101
Tompkins	036109	<b>Delaware</b>	039041	<b>Medina</b>	039103
Ulster	036111	<b>Erie</b>	039043	<b>Meigs</b>	039105
Warren	036113	<b>Fairfield</b>	039045	<b>Mercer</b>	039107
Washington	036115	<b>Fayette</b>	039047	<b>Miami</b>	039109
Wayne	036117	<b>Franklin</b>	039049	<b>Monroe</b>	039111
Westchester	036119	<b>Fulton</b>	039051	<b>Montgomery</b>	039113
Wyoming	036121	<b>Gallia</b>	039053	<b>Morgan</b>	039115
Yates	036123	<b>Geauga</b>	039055	<b>Morrow</b>	039117
		<b>Greene</b>	039057	<b>Muskingum</b>	039119
		<b>Guernsey</b>	039059	<b>Noble</b>	039121
<b>OHIO</b>	<b>039000</b>	<b>Hamilton</b>	039061	<b>Ottawa</b>	039123
Adams	039001	<b>Hancock</b>	039063	<b>Paulding</b>	039125

<b>OHIO (cont)</b>		Atoka	040005	Jefferson	040067
Perry	039127	Beaver	040007	Johnston	040069
Pickaway	039129	Beckham	040009	Kay	040071
Pike	039131	Blaine	040011	Kingfisher	040073
Portage	039133	Bryan	040013	Kiowa	040075
Preble	039135	Caddo	040015	Latimer	040077
Putnam	039137	Canadian	040017	Le Flore	040079
Richland	039139	Carter	040019	Lincoln	040081
Ross	039141	Cherokee	040021	Logan	040083
Sandusky	039143	Choctaw	040023	Love	040085
Scioto	039145	Cimarron	040025	McClain	040087
Seneca	039147	Cleveland	040027	McCurtain	040089
Shelby	039149	Coal	040029	McIntosh	040091
Stark	039151	Comanche	040031	Major	040093
Summit	039153	Cotton	040033	Marshall	040095
Trumbull	039155	Craig	040035	Mayes	040097
Tuscarawas	039157	Creek	040037	Murray	040099
Union	039159	Custer	040039	Muskogee	040101
Van Wert	039161	Delaware	040041	Noble	040103
Vinton	039163	Dewey	040043	Nowata	040105
Warren	039165	Ellis	040045	Oklfuskee	040107
Washington	039167	Garfield	040047	Oklahoma	040109
Wayne	039169	Garvin	040049	Okmulgee	040111
Williams	039171	Grady	040051	Osage	040113
Wood	039173	Grant	040053	Ottawa	040115
Wyandot	039175	Greer	040055	Pawnee	040117
		Harmon	040057	Payne	040119
		Harper	040059	Pittsburg	040121
<b>OKLAHOMA</b>	<b>040000</b>	Haskell	040061	Pontotoc	040123
Adair	040001	Hughes	040063	Pottawatomie	040125
Alfalfa	040003	Jackson	040065	Pushmataha	040127

<b>OKLAHOMA (cont)</b>		Jackson	041029	Blair	042013
Roger Mills	040129	Jefferson	041031	Bradford	042015
Rogers	040131	Josephine	041033	Bucks	042017
Seminole	040133	Klamath	041035	Butler	042019
Sequoyah	040135	Lake	041037	Cambria	042021
Stephens	040137	Lane	041039	Cameron	042023
Texas	040139	Lincoln	041041	Carbon	042025
Tillman	040141	Linn	041043	Centre	042027
Tulsa	040143	Malheur	041045	Chester	042029
Wagoner	040145	Marion	041047	Clarion	042031
Washington	040147	Morrow	041049	Clearfield	042033
Washita	040149	Multnomah	041051	Clinton	042035
Woods	040151	Polk	041053	Columbia	042037
Woodward	040153	Sherman	041055	Crawford	042039
		Tillamook	041057	Cumberland	042041
		Umatilla	041059	Dauphin	042043
<b>OREGON</b>	<b>041000</b>	Union	041061	Delaware	042045
Baker	041001	Wallowa	041063	Elk	042047
Benton	041003	Wasco	041065	Erie	042049
Clackamas	041005	Washington	041067	Fayette	042051
Clatsop	041007	Wheeler	041069	Forest	042053
Columbia	041009	Yamhill	041071	Franklin	042055
Coos	041011			Fulton	042057
Crook	041013			Greene	042059
Curry	041015	<b>PENNSYLVANIA</b>	<b>042000</b>	Huntingdon	042061
Deschutes	041017	Adams	042001	Indiana	042063
Douglas	041019	Allegheny	042003	Jefferson	042065
Gilliam	041021	Armstrong	042005	Juniata	042067
Grant	041023	Beaver	042007	Lackawanna	042069
Harney	041025	Bedford	042009	Lancaster	042071
Hood River	041027	Berks	042011	Lawrence	042073

<b>PENNSYLVANIA (cont)</b>				Florence	045041
Lebanon	042075			Georgetown	045043
Lehigh	042077	<b>RHODE ISLAND 044000</b>		Greenville	045045
Luzerne	042079	Bristol	044001	Greenwood	045047
Lycoming	042081	Kent	044003	Hampton	045049
McKean'	042083	Newport	044005	Horry	045051
Mercer	042085	Providence	044007	Jasper	045053
Mifflin	042087	Washington	044009	Kershaw	045055
Monroe	042089			Lancaster	045057
Montgomery	042091			Laurens	045059
Montour	042093	<b>SOUTH CAROLINA 045000</b>		Lee	045061
Northampton	042095	Abbeville	045001	Lexington	045063
Northumberland	042097	Aiken	045003	McCormick	045065
Perry	042099	Allendale	045005	Marion	045067
Philadelphia	042101	Anderson	045007	Marlboro	045069
Pike	042103	Bamberg	045009	Newberry	045071
Potter	042105	Barnwell	045011	Oconee	045073
Schuylkill	042107	Beaufort	045013	Orangeburg	045075
Snyder	042109	Berkeley	045015	Pickens	045077
Somerset	042111	Calhoun	045017	Richland	045079
Sullivan	042113	Charleston	045019	Saluda	045081
Susquehanna	042115	Cherokee	045021	Spartanburg	045083
Tioga	042117	Chester	045023	Sumter	045085
Union	042119	Chesterfield	045025	Union	045087
Venango	042121	Clarendon	045027	Williamsburg	045089
Warren	042123	Colleton	045029	York	045091
Washington	042125	Darlington	045031		
Wayne	042127	Dillon	045033		
Westmoreland	042129	Dorchester	045035	<b>SOUTH DAKOTA 046000</b>	
Wyoming	042131	Edgefield	045037	Aurora	046003
York	042133	Fairfield	045039	Beadle	046005

<b>SOUTH DAKOTA (cont)</b>		Hutchinson	046067	Walworth	046129	—
Bennett	046007	Hyde	046069	Yankton	046135	—
Bon Homme	046009	Jackson	046071	Ziebach	046137	—
Brookings	046011	Jerauld	046073			—
Brown	046013	Jones	046075			—
Brule	046015	Kingsbury	046077	<b>TENNESSEE</b>	<b>047000</b>	—
Buffalo	046017	Lake	046079	Anderson	047001	—
Butte	046019	Lawrence	046081	Bedford2	047003	—
Campbell	046021	Lincoln	046083	Bedford	047003	—
Charles Mix	046023	Lyman	046085	Benton	047005	—
Clark	046025	McCook	046087	Bledsoe	047007	—
Clay	046027	McPherson	046089	Blount	047009	—
Codington	046029	Marshall	046091	Bradley	047011	—
Corson	046031	Meade	046093	Campbell	047013	—
Custer	046033	Mellette	046095	Cannon	047015	—
Davison	046035	Miner	046097	Carroll	047017	—
Day	046037	Minnehaha	046099	Carter	047019	—
Deuel	046039	Moody	046101	Cheatham	047021	—
Dewey	046041	Pennington	046103	Chester	047023	—
Douglas	046043	Perkins	046105	Claiborne	047025	—
Edmunds	046045	Potter	046107	Clay	047027	—
Fall River	046047	Roberts	046109	Cocke	047029	—
Faulk	046049	Sanborn	046111	Coffee	047031	—
Grant	046051	Shannon	046113	Crockett	047033	—
Gregory	046053	Spink	046115	Cumberland	047035	—
Haakon	046055	Stanley	046117	Davidson	047037	—
Hamlin	046057	Sully	046119	Decatur	047039	—
Hand	046059	Todd	046121	DeKalb	047041	—
Hanson	046061	Tripp	046123	Dickson	047043	—
Harding	046063	Turner	046125	Dyer	047045	—
Hughes	046065	Union	046127	Fayette	047047	—

<b>TENNESSEE (cont)</b>		McNairy	047109	Unicoi	047171
Fentress	047049	Macon	047111	Union	047173
Franklin	047051	Madison	047113	Van Buren	047175
Gibson	047053	Marion	047115	Warren	047177
Giles	047055	Marshall	047117	Washington	047179
Grainger	047057	Maury	047119	Wayne	047181
Greene	047059	Meigs	047121	Weakley	047183
Grundy	047061	Monroe	047123	White	047185
Hamblen	047063	Montgomery	047125	Williamson	047187
Hamilton	047065	Moore	047127	Wilson	047189
Hancock	047067	Morgan	047129		
Hardeman	047069	Obion	047131		
Hardin	047071	Overton	047133	<b>TEXAS</b>	<b>048000</b>
Hawkins	047073	Perry	047135	Anderson	048001
Haywood	047075	Pickett	047137	Andrews	048003
Henderson	047077	Polk	047139	Angelina	048005
Henry	047079	Putnam	047141	Aransas	048007
Hickman	047081	Rhea	047143	Archer	048009
Houston	047083	Roane	047145	Armstrong	048011
Humphreys	047085	Robertson	047147	Atascosa	048013
Jackson	047087	Rutherford	047149	Austin	048015
Jefferson	047089	Scott	047151	Bailey	048017
Johnson	047091	Sequatchie	047153	Bandera	048019
Knox	047093	Sevier	047155	Bastrop	048021
Lake	047095	Shelby	047157	Baylor	048023
Lauderdale	047097	Smith	047159	Bee	048025
Lawrence	047099	Stewart	047161	Bell	048027
Lewis	047101	Sullivan	047163	Bexar	048029
Lincoln	047103	Sumner	047165	Blanco	048031
Loudon	047105	Tipton	047167	Borden	048033
McMinn	047107	Trousdale	047169	Bosque	048035

<b>TEXAS (cont)</b>		Cooke	048097	Franklin	048159
Bowie	048037	Coryell	048099	Freestone	048161
Brazoria	048039	Cottle	048101	Frio	048163
Brazos	048041	Crane	048103	Gaines	048165
Brewster	048043	Crockett	048105	Galveston	048167
Briscoe	048045	Crosby	048107	Garza	048169
Brooks	048047	Culberson	048109	Gillespie	048171
Brown	048049	Dallam	048111	Glasscock	048173
Burleson	048051	Dallas	048113	Goliad	048175
Burnet	048053	Dawson	048115	Gonzales	048177
Caldwell	048055	Deaf Smith	048117	Gray	048179
Calhoun	048057	Delta	048119	Grayson	048181
Callahan	048059	Denton	048121	Gregg	048183
Cameron	048061	De Witt	048123	Grimes	048185
Camp	048063	Dickens	048125	Guadalupe	048187
Carson	048065	Dimmit	048127	Hale	048189
Cass	048067	Donley	048129	Hall	048191
Castro	048069	Duval	048131	Hamilton	048193
Chambers	048071	Eastland	048133	Hansford	048195
Cherokee	048073	Ector	048135	Hardeman	048197
Childress	048075	Edwards	048137	Hardin	048199
Clay	048077	Ellis	048139	Harris	048201
Cochran	048079	El Paso	048141	Harrison	048203
Coke	048081	Erath	048143	Hartley	048205
Coleman	048083	Falls	048145	Haskell	048207
Collin	048085	Fannin	048147	Hays	048209
Collingsworth	048087	Fayette	048149	Hemphill	048211
Colorado	048089	Fisher	048151	Henderson	048213
Comal	048091	Floyd	048153	Hidalgo	048215
Comanche	048093	Foard	048155	Hill	048217
Concho	048095	Fort Bend	048157	Hockley	048219

<b>TEXAS (cont)</b>		Lampasas	048281	Morris	048343
Hood	048221	La Salle	048283	Motley	048345
Hopkins	048223	Lavaca	048285	Nacogdoches	048347
Houston	048225	Lee	048287	Navarro	048349
Howard	048227	Leon	048289	Newton	048351
Hudspeth	048229	Liberty	048291	Nolan	048353
Hunt	048231	Limestone	048293	Nueces	048355
Hutchinson	048233	Lipscomb	048295	Ochiltree	048357
Irion	048235	Live Oak	048297	Oldham	048359
Jack	048237	Llano	048299	Orange	048361
Jackson	048239	Loving	048301	Palo Pinto	048363
Jasper	048241	Lubbock	048303	Panola	048365
Jeff Davis	048243	Lynn	048305	Parker	048367
Jefferson	048245	McCulloch	048307	Parmer	048369
Jim Hogg	048247	McLennan	048309	Pecos	048371
Jim Wells	048249	McMullen	048311	Polk	048373
Johnson	048251	Madison	048313	Potter	048375
Jones	048253	Marion	048315	Presidio	048377
Karnes	048255	Martin	048317	Rains	048379
Kaufman	048257	Mason	048319	Randall	048381
Kendall	048259	Matagorda	048321	Reagan	048383
Kenedy	048261	Maverick	048323	Real	048385
Kent	048263	Medina	048325	Red River	048387
Kerr	048265	Menard	048327	Reeves	048389
Kimble	048267	Midland	048329	Refugio	048391
King	048269	Milam	048331	Roberts	048393
Kinney	048271	Mills	048333	Robertson	048395
Kleberg	048273	Mitchell	048335	Rockwall	048397
Knox	048275	Montague	048337	Runnels	048399
Lamar	048277	Montgomery	048339	Rusk	048401
Lamb	04279	Moore	048341	Sabine	048403

<b>TEXAS (cont)</b>		Val Verde	048465	Duchesne	049013
San Augustine	048405	Van Zandt	048467	Emery	049015
San Jacinto	048407	Victoria	048469	Garfield	049017
San Patricio	048409	Walker	048471	Grand	049019
San Saba	048411	Waller	048473	Iron	049021
Schleicher	048413	Ward	048475	Juab	049023
Scurry	048415	Washington	048477	Kane	049025
Shackelford	048417	Webb	048479	Millard	049027
Shelby	048419	Wharton	048481	Morgan	049029
Sherman	048421	Wheeler	048483	Piute	049031
Smith	048423	Wichita	048485	Rich	049033
Somervell	048425	Wilbarger	048487	Salt Lake	049035
Starr	048427	Willacy	048489	San Juan	049037
Stephens	048429	Williamson	048491	Sanpete	049039
Sterling	048431	Wilson	048493	Sevier	049041
Stonewall	048433	Winkler	048495	Summit	049043
Sutton	048435	Wise	048497	Tooele	049045
Swisher	048437	Wood	048499	Uintah	049047
Tarrant	048439	Yoakum	048501	Utah	049049
Taylor	048441	Young	048503	Wasatch	049051
Terrell	048443	Zapata	048505	Washington	049053
Terry	048445	Zavala	048507	Wayne	049055
Throckmorton	048447			Weber	049057
Titus	048449				
Tom Green	048451	<b>UTAH</b>	<b>049000</b>		
Travis	048453	Beaver	049001	<b>VIRGINIA</b>	<b>051000</b>
Trinity	048455	Box Elder	049003	Accomack	051001
Tyler	048457	Cache	049005	Albemarle	051003
Upshur	048459	Carbon	049007	Alleghany	051005
Upton	048461	Daggett	049009	Amelia	051007
Uvalde	048463	Davis	049011	Amherst	051009

<b>VIRGINIA (cont)</b>		Gloucester	051073	Page	051139
Appomattox	051011	Goochland	051075	Patrick	051141
Arlington	051013	Grayson	051077	Pittsylvania	051143
Augusta	051015	Greene	051079	Powhatan	051145
Bath	051017	Greenville	051081	Prince Edward	051147
Bedford	051019	Halifax	051083	Prince George	051149
Bland	051021	Hanover	051085	Prince William	051153
Botetourt	051023	Henrico	051087	Pulaski	051155
Brunswick	051025	Henry	051089	Rappahannock	051157
Buchanan	051027	Highland	051091	Richmond	051159
Buckingham	051029	Isle of Wight	051093	Roanoke	051161
Campbell	051031	James City	051095	Rockbridge	051163
Caroline	051033	King and Queen	051097	Rockingham	051165
Carroll	051035	King George	051099	Russell	051167
Charles City	051036	King William	051101	Scott	051169
Charlotte	051037	Lancaster	051103	Shenandoah	051171
Chesterfield	051041	Lee	051105	Smyth	051173
Clarke	051043	Loudoun	051107	Southampton	051175
Craig	051045	Louisa	051109	Spotsylvania	051177
Culpeper	051047	Lunenburg	051111	Stafford	051179
Cumberland	051049	Madison	051113	Surry	051181
Dickenson	051051	Mathews	051115	Sussex	051183
Dinwiddie	051053	Mecklenburg	051117	Tazewell	051185
Essex	051057	Middlesex	051119	Warren	051187
Fairfax	051059	Montgomery	051121	Washington	051191
Fauquier	051061	Nelson	051125	Westmoreland	051193
Floyd	051063	New Kent	051127	Wise	051195
Fluvanna	051065	Northampton	051131	Wythe	051197
Franklin	051067	Northumberland	051133	York	051199
Frederick	051069	Nottoway	051135	Alexandria	051510
Giles	051071	Orange	051137	Bedford	051515

<b>VIRGINIA (cont)</b>		Richmond2	051760	Asotin	053003
Bedford2	051515	Roanoke2	051770	Benton	053005
Bristol	051520	Salem	051775	Chelan	053007
Buena Vista	051530	South Boston	051780	Clallam	053009
Charlottesville	051540	Staunton	051790	Clark	053011
Chesapeake	051550	Suffolk	051800	Columbia	053013
Clifton Forge	051560	Virginia Beach	051810	Cowlitz	053015
Colonial Heights	051570	Waynesboro	051820	Douglas	053017
Covington	051580	Williamsburg	051830	Ferry	053019
Danville	051590	Winchester	051840	Franklin	053021
Emporia	051595			Garfield	053023
Fairfax2	051600			Grant	053025
Falls Church	051610	<b>VERMONT</b>	<b>050000</b>	Grays Harbor	053027
Franklin2	051620	Addison	050001	Island	053029
Fredericksburg	051630	Bennington	050003	Jefferson	053031
Galax	051640	Caledonia	050005	King	053033
Hampton	051650	Chittenden	050007	Kitsap	053035
Harrisonburg	051660	Essex	050009	Kittitas	053037
Hopewell	051670	Franklin	050011	Klickitat	053039
Lexington	051678	Grand Isle	050013	Lewis	053041
Lynchburg	051680	Lamoille	050015	Lincoln	053043
Manassas	051683	Orange	050017	Mason	053045
Manassas Park	051685	Orleans	050019	Okanogan	053047
Martinsville	051690	Rutland	050021	Pacific	053049
Newport News	051700	Washington	050023	Pend Oreille	053051
Norfolk	051710	Windham	050025	Pierce	053053
Norton	051720	Windsor	050027	San Juan	053055
Petersburg	051730			Skagit	053057
Poquoson	051735			Skamania	053059
Portsmouth	051740	<b>WASHINGTON 053000</b>		Snohomish	053061
Radford	051750	Adams	053001	Spokane	053063

<b>WASHINGTON (cont)</b>		Forest	055041	Racine	055101
Stevens	053065	Grant	055043	Richland	055103
Thurston	053067	Green	055045	Rock	055105
Wahkiakum	053069	Green Lake	055047	Rusk	055107
Walla Walla	053071	Iowa	055049	St. Croix	055109
Whatcom	053073	Iron	055051	Sauk	055111
Whitman	053075	Jackson	055053	Sawyer	055113
Yakima	053077	Jefferson	055055	Shawano	055115
		Juneau	055057	Sheboygan	055117
		Kenosha	055059	Taylor	055119
<b>WISCONSIN</b>	<b>055000</b>	Kewaunee	055061	Trempealeau	055121
Adams	055001	La Crosse	055063	Vernon	055123
Ashland	055003	Lafayette	055065	Vilas	055125
Barron	055005	Langlade	055067	Walworth	055127
Bayfield	055007	Lincoln	055069	Washburn	055129
Brown	055009	Manitowoc	055071	Washington	055131
Buffalo	055011	Marathon	055073	Waukesha	055133
Burnett	055013	Marinette	055075	Waupaca	055135
Calumet	055015	Marquette	055077	Waushara	055137
Chippewa	055017	Menominee	055078	Winnebago	055139
Clark	055019	Milwaukee	055079	Wood	055141
Columbia	055021	Monroe	055081		
Crawford	055023	Oconto	055083		
Dane	055025	Oneida	055085	<b>WEST VIRGINIA</b>	<b>054000</b>
Dodge	055027	Outagamie	055087	Barbour	054001
Door	055029	Ozaukee	055089	Berkeley	054003
Douglas	055031	Pepin	055091	Boone	054005
Dunn	055033	Pierce	055093	Braxton	054007
Eau Claire	055035	Polk	055095	Brooke	054009
Florence	055037	Portage	055097	Cabell	054011
Fond du Lac	055039	Price	055099	Calhoun	054013

<b>WEST VIRGINIA (cont)</b>		Pocahontas	054075	Laramie	056021
Clay	054015	Preston	054077	Lincoln	056023
Doddridge	054017	Putnam	054079	Natrona	056025
Fayette	054019	Raleigh	054081	Niobrara	056027
Gilmer	054021	Randolph	054083	Park	056029
Grant	054023	Ritchie	054085	Platte	056031
Greenbrier	054025	Roane	054087	Sheridan	056033
Hampshire	054027	Summers	054089	Sublette	056035
Hancock	054029	Taylor	054091	Sweetwater	056037
Hardy	054031	Tucker	054093	Teton	056039
Harrison	054033	Tyler	054095	Uinta	056041
Jackson	054035	Upshur	054097	Washakie	056043
Jefferson	054037	Wayne	054099	Weston	056045
Kanawha	054039	Webster	054101		
Lewis	054041	Wetzel	054103		
Lincoln	054043	Wirt	054105	<b>AMERICAN SAMOA 060000</b>	
Logan	054045	Wood	054107	Eastern	060010
McDowell	054047	Wyoming	054109	Manua	060020
Marion	054049			Rose Island	060030
Marshall	054051			Swains Island	060040
Mason	054053	<b>WYOMING</b>	<b>056000</b>	Western	060050
Mercer	054055	Albany	056001		
Mineral	054057	Big Horn	056003		
Mingo	054059	Campbell	056005	<b>FEDERATED STATE OF MICRONESIA 064000</b>	
Monongalia	054061	Carbon	056007	Chuuk	064002
Monroe	054063	Converse	056009	Kosrae	064005
Morgan	054065	Crook	056011	Pohnpei	064040
Nicholas	054067	Fremont	056013	Yap	064060
Ohio	054069	Goshen	056015		
Pendleton	054071	Hot Springs	056017		
Pleasants	054073	Johnson	056019		

<b>GUAM</b>	<b>066000</b>	Rongelap	068350	Ngiwal	070228
Guam	066010	Rongrik	068360	Peleliu	070350
		Toke	068385	Sonsorol	070370
		Ujae	068390		
<b>MARSHALL</b>		Ujelang	068400		
<b>ISLANDS</b>	<b>068000</b>	Utrik	068410	<b>PUERTO RICO</b>	<b>072000</b>
Ailinginae	068007	Wotho	068420	Adjuntas	072001
Ailinglaplap	068010	Wotje	068430	Aguada	072003
Ailuk	068030			Aguadilla	072005
Arno	068040			Aguas Buenas	072007
Aur	068050	<b>NORTHERN MARIANA ISLAND</b>	<b>069000</b>	Aibonito	072009
Bikar	068060	Northern Island	069085	Anasco	072011
Bikini	068070	Rota	069100	Arecibo	072013
Bokak	068073	Saipan	069110	Arroyo	072015
Ebon	068080	Tinian	069120	Barceloneta	072017
Enewetak	068090			Barranquitas	072019
Erikub	068100			Bayamon	072021
Jabat	068110	<b>PALAU</b>	<b>070000</b>	Cabo Roio	072023
Jaluit	068120	Aimeliik	070002	Caguas	072025
Jemo	068130	Airai	070004	Camuy	072027
Kili	068140	Angaur	070010	Canovanas	072029
Kwajalein	068150	Hatoboei	070050	Carolina	072031
Lae	068160	Kayangel	070100	Catano	072033
Lib	068170	Koror	070150	Cayey	072035
Likiep	068180	Melekeok	070212	Ceioa	072037
Majuro	068190	Ngaraard	070214	Ciales	072039
Maloelap	068300	Ngarchelong	070218	Cidra	072041
Mejit	068310	Ngardmau	070222	Coamo	072043
Mili	068320	Ngatpang	070224	Comerio	072045
Namorik	068330	Ngchesar	070226	Corozal	072047
Namu	068340	Ngeremlengui	070227	Culebra	072049

<b>PUERTO RICO (cont)</b>		Patillas	072109	Kingman Reef	074250
Dorado	072051	Penuelas	072111	Midway Islands	074300
Fajardo	072053	Ponce	072113	Navassa Island	074350
Florida	072054	Quebradillas	072115	Palmyra Atoll	074400
Guanica	072055	Rincon	072117	Wake Island	074450
Guayanilla	072057	Rio Grande	072119		
Guayanilla	072059	Sabana Grande	072121		
Guaynabo	072061	Salinas	072123	<b>VIRGIN ISLANDS OF THE</b>	
Gurabo	072063	San German	072125	<b>UNITED STATES</b>	<b>078000</b>
Hatillo	072065	San Juan	072127	St. Croix	078010
Hormigueros	072067	San Lorenzo	072129	St. John	078020
Humacao	072069	San Sebastian	072131	St. Thomas	078030
Isabela	072071	Santa Isabel	072133		
Jayuya	072073	Toa Alta	072135		
Juana Diaz	072075	Toa Baia	072137		
Juncos	072077	Trujillo Alto	072139		
Lajas	072079	Utuado	072141		
Lares	072081	Vega Alta	072143		
LasMarias	072083	Vega Baja	072145		
LasPedras	072085	Vieques	072147		
Loiza	072087	Villalba	072149		
Luquillo	072089	Yabucoa	072151		
Manati	072091	Yauco	072153		
Maricao	072093				
Maunabo	072095				
Mayaguez	072097	<b>U. S. MINOR OUTLYING</b>			
Moca	072099	<b>ISLANDS</b>	<b>074000</b>		
Morovis	072101	Baker Island	074050		
Naguabo	072103	Howland Island	074100		
Naranjito	072105	Jarvis Island	074150		
Orocovis	072107	Johnston Island	074200		

## **MIP-921<sup>S</sup> - Two Year Limited Warranty**

HOLLYANNE CORPORATION warrants to the original purchaser that the MIP-921<sup>S</sup> shall be free from defects in material or workmanship for two years from the date of original purchase.

During the warranty period, the HOLLYANNE CORPORATION or an authorized HollyAnne Corporation service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship.

To obtain such a warranty service, the original purchaser must:

- (1) Notify the HOLLYANNE CORPORATION or the nearest authorized service facility, as soon as possible after discovery of a possible defect of:
  - (a) the model and serial number,
  - (b) the identity of the seller and the approximate date of purchase,
  - (c) a detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.

- (2) Deliver the MIP-921<sup>S</sup> to the HOLLYANNE CORPORATION or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from the MIP-921<sup>S</sup>. Therefore, carefully read the Instruction Manual. This warranty does not apply to any defect that HOLLYANNE CORPORATION determines is due to:

- (3) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
- (4) Misuse, abuse, neglect, or improper installation.
- (5) Accidental or intentional damage; including acts of nature.

All implied warranties, if any, terminate ninety (90) days from the date of the original purchase.

The foregoing constitutes HOLLYANNE CORPORATION'S entire obligation with respect to the MIP-921<sup>S</sup>, and the original purchaser and user or owner shall have no other remedy and no claim for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**For service information, contact:**

**HOLLYANNE CORPORATION  
207 West O'Connor Ave.  
Greeley, Nebraska 68842**

**For warranty and/or returns, contact:**

**HOLLYANNE CORPORATION  
207 West O'Connor Ave.  
Greeley, Nebraska 68842**

**Customer Service Center Phone: (308) 428-4705      Fax: (308) 428-5585**